The Builder.

VOL. LXXXVII.—No. 3218. OCTOBER 8, 1904.

ILLUSTRATIONS.

Design for Stained Glass .....By Mr. Horace Wooller.
Competition Design for Hull Town Hall .....By Mr. John Murray, F.R.I.B.A.
New Offices for the Bristol Gas Company .....Mr. W. V. Gough, Architect.
Illustrations of State of Canterbury Tower .....From Photographs.

Illustrations in Text.

Greenstead Church: before Restoration of 1845-9. (From an old drawing..... Page 352
Ditto: from South-east ..... Page 353
Ditto: North Side..... Page 354
Competition Design for Hull Town Hall. Plan ..... Page 366
New Offices for the Bristol Gas Company. Plan ..... Page 367

CONTENTS.

	PAGE
The Church of Greenstead	351
Notes	355
Letter from Paris	358
The Architectural Association.....	358
The Architectural Association School of Design ...	362
University Extension Guild	364
The Thames and Riverside Houses	365
The London County Council	365
Illustrations :—	
A Design for Stained Glass.....	366
Design for the Extension of Hull Town Hall	366
New Offices for the Bristol Gas Company.....	366
Photographs from Canterbury Tower	367
Lunatic Asylums	367
Applications under the London Building Act, 1894	368
Engineering Societies	369
Competitions	369
Books—F. Miltoun's "The Cathedrals of Northern France"; A. C. Freeman's "Hints on the Planning of Poor-Law Buildings and Mortuaries"; "Model Answers to Questions Set by the Sanitary Institute"; C. F. Townsend's "Heating and Ventilation of Houses"; G. Jekyll's "Old West Surrey"; C. E. Larter's "Minehead, Porlock, and Dunster"	369
Books Received	370
Trade Catalogues	370
The Student's Column.....	370
Lagos Mahogany.....	371
Metropolitan Asylums Board	371
Obituary.....	372
General Building News	372
Stained Glass and Decoration	373
Sanitary and Engineering News	373
Foreign	373
Miscellaneous	373
Legal :— An Architect's Claim for Professional Services...	374
Patents	375
Some Recent Sales	375
Meetings	376
Prices Current.....	376
Tenders	377

The Church of Greenstead.

ABOUT a mile to the west of Chipping Ongar, reached by a beautiful walk through meadows flanked on each side by a wide avenue of elm-trees, lies the little church of St. Andrew, Greenstead, which serves for a small parish of less than one hundred inhabitants. Hidden among the trees, and at first sight of no particular moment, this diminutive village church may yet fairly lay claim to be in some respects the most interesting in all England.

It is upwards of a century and a half since attention was drawn to the singular construction of the nave. Among the Stowe MSS. of the British Museum are a collection of original letters on antiquarian subjects, written by Mr. Smart Lethieullier, of Aldersbrook, Essex, to Dr. Lyttleton, the then president of the Society of Antiquaries. The following is an exact transcript of a letter dated from Aldersbrook on January 21, 1751-2 (Stowe MSS. 752, f. 49) :—

"In obedience to your command I send you the best account I can collect concerning our very singular parish church at Greensted, juxta Ongar, in this county.

"What is now the body of the church was the whole of the original fabrick. It is 29 ft. 9 in. long and 14 ft. wide. The sides from the present ground without, only 5 ft. 6 in. high, on which the primitive roof depended, but whether of thatch or of other materials, we have nothing to determine by. This structure is entirely composed of the bodies of oak-trees split and roughly hewn on both sides. They were sett upright close to one another and lett into a sill at bottom and a plate at top, where they are fasten'd with wooden pins all in a very rough manner at first, and now much corroded and worn with age.

"There appears one little contrivance of art in ye building, viz., that the edge of one tree is made to slip a little within its neighbour, doubtless to prevent the wind from blowing thro, but upon the whole I think an ax, a chizzel, a mallet, and an augre were tools sufficient to compleat the fabrick.

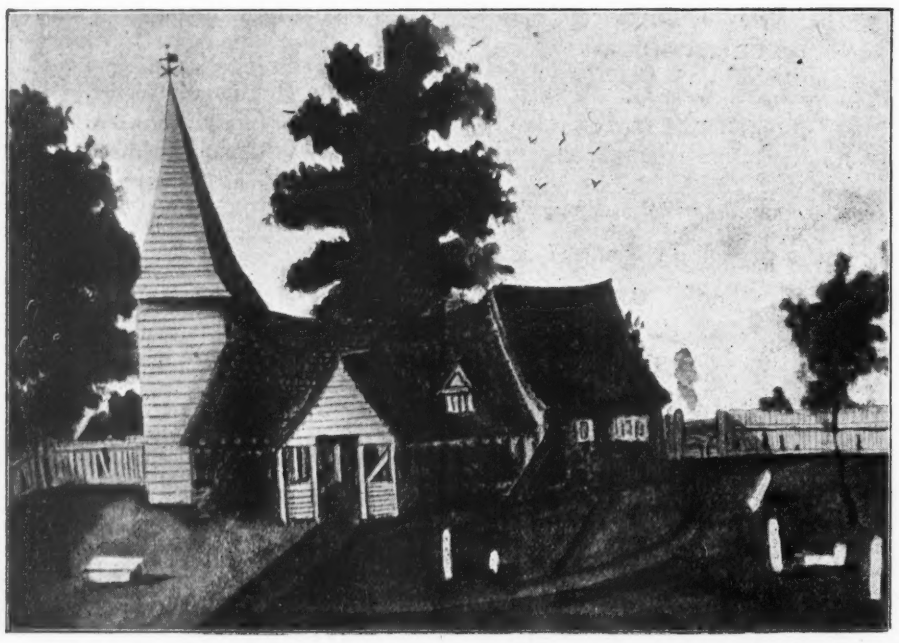
"It was no small pleasure to me to meet with a passage quoted from an ancient MS., which in some measure I think determines the time and occasion of erecting this uncommon fabrick.

"Leland and the compilers of the Monasticon have extracted a passage from a register once belonging to the Abbey of St. Edmunds Bury in Suffolk, wherein it is recorded that the body of St. Edmund the King and Martyr, being on its way from London to Bury, was lodg'd one night at Stapleford in Essex, when the Ld of the manor was by its presence miraculously cured of an infirmity he had long labour'd under; and then says the register—*Idem apud Aungre hospitiabatur ubi in ejus memoria lignea capella permanet hodie.* 'Tis no wonder that the monk who drew up this register should mistake Aungre for Greensted in his placing this chapel, since they are hardly a mile asunder; but it is evident that the present road thro Ongar is a much later one, since it cutts thro the outward fortifications of the castle, which was built there in Henry ye 2nd's time. And we have both tradition and visible remains that the antient road from London into Suffolk ran thro Oldford, Abridge, Stapleford, Greensted (perhaps Green Street), Dunmowe, and Clare upon the borders of the two counties.

"The forementioned Translation of the body of St. Edmund appears to have been in the year 1013. For the Danish fleet under Turkill, having committed great ravages in most parts of England, Ailwinus bishop of Elmham in ye year 1010, the 30th of King Ethelred, caused the holy body to be transported to London for safety against those ravagers, and peace being soon after bought, the body was three years after recarried to Bury.

"From all which I think we may reasonably conjecture that this wooden fabrick was at that time erected on purpose to receive the holy body, and having been once so honour'd was preserved with veneration and converted into a parish church with the addition of a small chancel in much later ages.

"Perhaps here is better authority for the history of this piece of antiquity than we have for any other of so remote an age, and of no more considerable import in its original; I look upon it as a thing done in haste for a particular



Greenstead Church: before Restoration of 1845-9. (*From an old drawing.*)

occasion, and not as any model for the style of the age it was erected in. I fear I have been tedious, but as you seem to esteem it a curious piece of antiquity I was willing to sett it in as clear a light as I was able."

Mr. Lethieullier forwarded some drawings of the church to Dr. Lyttleton with his letter, and the Society of Antiquaries considered them to be of sufficient importance to be figured in *Vetusta Monumenta* (vol. ii., pl. 7). On that plate is given a general south view of the church drawn in 1748, of the timber wall of the north side, and of the timbers of the west end of the church. A single dormer window, of four lights, is shown in the roof of the nave on the south side. There is a clumsily-made plain wooden porch on the same side. The priests' door, of moulded brick, with a window each side, appears in the chancel. A vacant space between the logs for a north doorway to the nave is also shown, though apparently plastered up. But the most interesting feature of these drawings is that of "the west end of the church." It is an exterior view of the west gable, formed of seventeen split logs with their rounded surfaces outwards, rising in the centre to a considerable height. The date and construction of this gable is evidently coeval with the side walls. A very small doorway is shown as roughly cut through parts of the two centre logs. This drawing could not have been an invention, and is clearly intended to show the condition of the west end before the tower was added, and which must then have remained with the tower simply built up against it. This very small doorway seems at that time to have been the only entrance into the tower. The west end remained, we suppose, in this primitive condition until the restoration of 1848-9.

From two drawings of this church of a later date, but prior to the restoration, we know that there were also two dormer windows to the nave on the north side.

There is a much-condensed abstract of the just cited letter of Mr. Lethieullier on the plate in the *Vetusta Monumenta*. His discovery of the interest pertaining to this fabric and his account and drawings of the building are of much value. There is not the least reason to doubt the correctness of his assumption that this is the very building that gave shelter to the body of St. Edmund on its return from London to Bury St. Edmund's in 1013, and that the old primitive building was subsequently retained unaltered in consequence of the honour that had been thus done to it. But where Mr. Lethieullier, followed by other antiquaries, is almost certainly wrong is in the suggestion that this wooden shelter was run up hastily for the mere purpose of affording a night's lodging for the much-venerated body of the saint. Against such a surmise there are several strong arguments. In the first instance, the words cited from the old register do not bear out this idea; the natural translation of the terms used implies that the wooden chapel remained or was preserved because of the use to which it had been put, and that there was a wooden consecrated chapel on the site when the body arrived. The notice of the approach of the body could have been but very brief, and the timber building with south and north doorways shows no sign whatever of hasty erection. Had the building been subsequently consecrated because of sheltering the body, surely it would have been dedicated to St. Edmund, and not (as is the case) to St. Andrew. Moreover, the old part of the fabric is not the least what might be expected in the XIth century, but rather pertains to a period earlier by one or two centuries. By the beginning of the XIth century churches of stone were certainly the rule and not the exception. Bede tells us that when Finan first erected his celebrated missionary church at Lindisfarne in 652 the bishop was content with one which was not built of stone, but, after the Scottish fashion, composed of cleft oak thatched with reeds (*More Scottorum de robore secto totum composuit atque harundine texit*). The term "cleft oak" is singularly appropriate to the nave of Greenstead church.

It has recently been shown in the columns of the *Builder* that the closely-adjacent market-town of Chipping Ongar had almost certainly its church of stone at the date of St. Edmund's translation. Why then, it may be asked, was not this venerated body lodged for the night within the consecrated stone walls of a more dignified sanctuary? The answer is a fairly obvious and interesting one: because parts of the country were still in an unsettled state. Those making this solemn journey would naturally be somewhat nervous as to being bereft of their precious charge, and would therefore prefer the shelter of a retired, forest-screened, old wooden chapel to that of the church so prominently situated in the midst of a little town.

In the "Memorials of Essex," by Rev. A. Suckling, published in 1845, a careful account is given of this church, accompanied by a lithographed plate of the north side, and by another plate having a ground plan (inaccurate), a portion of the timbers on the south side, and other details. Shortly after this volume was issued the chancel was restored, and that was soon followed by the restoration of the oldest part of the fabric. Beneath the tower, against the north wall, is a board incised with the following inscription:—

"The chancel of this church was restored 1845, the nave 1848-9.

PHILIP W. RAY, Rector.
WM. SMITH, JOSEPH KEMSLEY, } Churchwardens.
T. H. WYATT, Architect.
J. BARLOW, Builder."

Whilst the latter work was in progress, the matter was more than once referred to in our columns; and on its completion a south view of the restored church appeared in this paper, which was afterwards reproduced in the *Gentleman's Magazine* for June, 1849.

At the time of the restoration of the nave poorly-selected deal was unfortunately used for the new roof. About forty years after its erection the roof showed such obvious signs of decay that its reconstruction soon became a necessity. An oak roof on an improved plan was substituted in 1894, under the superintendence of Mr. F. Chancellor. At the same time a brick buttress was wisely removed from the north wall of the nave, exposing the sound timbers behind it.

After the restoration of 1848-9, the rector (Rev. P. W. Ray) published a booklet on this church, which ran through three editions. It was illustrated by two poor plates of the south side before and after restoration, and by a useful plate giving a transverse section of four of the logs with the uniting tongues of wood, and also a side view of one of the logs showing the groove for the tongue.

In a good article on the timber work of Essex churches which appeared in the *Essex Archæological Journal* for 1869 (vol. iv., old series) a north view of the church is given.

Before entering on the brief consideration of the present condition of the church and of the timber walls of the nave, it will be best to give further particulars of its vigorous restoration in 1848-9. The *Builder* of those days commented on the severity of the treatment, and this brought a letter from Mr. Barlow, of Ongar, the builder, which appeared on January 27, 1849. He there states that the principal cause of the walls being

taken down was that "the oak sills, having been laid on the earth with merely some rough flint put under them at intervals, had become so rotten as to let the upright timbers drop through, and, had not the ends of the wall-plates rested on the brickwork of the chancel, a great part of the nave must have fallen." He added that it was the wish of the rector and architect that every possible part of the old timbers should be preserved; that the only parts lost were about 6 in. cut from the lower ends; and that the timbers had been fresh tenoned and inserted in oak sills laid on brickwork 12 in. from the ground. He further stated that the planks when cut were found to be "so hard as almost to defy the saw." The scheme also involved the taking off of the plaster from the interior, so that the inner sides of the somewhat roughly-hewn logs were left exposed. Other facts as to the restoration are made clear by a further notice in the *Builder* and by the rector's little book. The cleft logs, or trunks, forming the walls, numbered twenty-five on the north side and twenty-one on the south. The rounded side of the trunks was placed outwards. Those on the north side were the least decayed, requiring only about an inch of rotten wood to be removed, whilst those on the south had about 5 in. taken away. The uprights were tenoned into the cills and wall-plates in grooves about 1½ in. deep, and fastened with wooden pins. The uprights were found to be tongued together at the junction with oak strips, which had proved to be a most effectual preservative against wet; for, although the interior was plastered, there was no evidence anywhere of moisture having found its way through the junction of the uprights. In the reconstruction of these walls the old plan was faithfully adhered to, the only alteration being that the bared inner walls show narrow strips of oak fastened on at the joinings of the uprights.

The curved outsides of the trunks were left exactly as they were found when the restoration began, save that one or two were wholly renewed and one was patched. At first sight, these outsides, then as now, present the appearance of having retained their bark; but a closer examination shows that the ten or twelve centuries of exposure to the weather has furrowed them, to the depth of from half an inch to an inch, into long, irregular ridges, through the decay of the softer parts of the surface wood.

There seems little doubt that the reconstruction of the old timber side walls was absolutely imperative at the time when it was undertaken, and that the work was on the whole executed on sound and careful lines. But one unhappy blunder was made. There was apparently no necessity for taking down the gabled west end, made (like the sides) of split trunks; even if it was so, it should have been re-erected on the old lines. Instead of this, the greater part of the centre lofty timbers were cleared away so as to leave a great doorway or quasi-arch into the western tower. We suppose this was done to make the base of the tower easily available as a vestry, which could scarcely have been the case when it was only entered by the very small doorway cut out of two of the logs, as has been already mentioned; but the destruction of so much of the most characteristic part of this ancient and unique fabric was a heavy price to pay for a few feet of vestry room.

A new open timber work porch was provided on the south side; its predecessor was pronounced "modern." The south doorway, of just the same dimensions as before, is 4 ft. 7 in. wide, including the jamb-posts. Nearly opposite, but a little nearer the west, is the north doorway, which is only 2 ft. 5 in. wide. It had been plastered up, but the opening was then filled with three new logs. It may here be mentioned that singularly bad choice was made of the few new logs or trunks required in 1848-9. If the three that fill up the north doorway are examined, they will be found to be already peppered with wormholes, and the grubs have obviously strayed from the softer new wood to the much harder adjacent old timber. Again, upright number five from the west end, on the north side, has been mended with a small new piece rather clumsily nailed on, and this piece is simply freckled over with wormholes, and is a dangerous source of infection to the rest. The whole of the logs, inside and out, most urgently require attention to check further worm ravages. They can be checked effectually with a comparatively small expenditure of money and care. The application of equal parts of benzine and linseed oil is usually successful. This work ought to be promptly undertaken. Having paid visits to this church in the autumn of 1903 and again in June and September, 1904, and having made diagrams of the number of wormholes in certain places on the north side, we are able to state that the progress of decay is now rapid.

The uprights vary much in size; the largest on the north side has a width of 16 in. and the narrowest only 7 in.; on the south side the widest is 17 in. and the narrowest 8½ in. The exterior measurement on the south side is 29 ft. 10 in. and on the north side 29 ft. 7 in. The interior width is 14 ft. 6 in. In one of the uprights just west of the north doorway a small pointed niche has been hollowed out, 11 in. high by 7 in. in width; this has doubtless served to hold a small holy-water stoup in the old days.

Greenstead Church: from South-east.

Gremstead Church: North Side.

The foolish idea, at one time so commonly held, and now and again repeated in guide-books and directories of the present day, that this old timber work is chestnut and not oak, had, perhaps, better be once for all combated. Mr. Letheuillier, Mr. Suckling, Professor Boulger (of the Essex Field Club), a deputation of the Linnean Society (who specially visited the church during restoration), and many other experts pronounce the timber to be certainly oak. This notion of a certain class of old oak being chestnut had at one time a strong hold upon the popular imagination, and though always exploded on investigation, seems as difficult to uproot as "leper" lowside windows or crusading cross-legged effigies. About a score of old buildings in England have shared with Greenstead in this fond imagining; the most noted cases being the roofs of Westminster Hall and of the refectory of Westminster Abbey. With regard to this belief that the roof beams and other timber of certain ancient buildings were of sweet chestnut wood, it must suffice here to cite some of the exact words of Selby in his "British Forest Trees":—

"The examination and the repeated experiments that of late years have been made upon this wood have satisfactorily proved that, in all such instances, the timber of the oak, and chiefly of the sessile-fruited kind, have been mistaken for chestnut. . . . The fact is, as Buffon first observed, the wood of the oak, more particularly of the sessile-fruited variety, assumes, in course of time, a near resemblance in colour to that of the chestnut in its best condition or when young and untainted at heart; and, as few chestnuts could have acquired the scantling frequently observed in the timber of these ancient buildings at the age dieling or decay almost invariably commences, this, in itself, furnishes a strong argument against the use of chestnut timbers and beams by our ancestors, inasmuch as the trees must have become unfit for the purpose long before they had attained the necessary dimensions."

When originally erected, this cleverly-built kind of a log-hut was complete in itself, and probably received a mere modicum of light from a window or windows in the east end; but the east end has long ago disappeared. It is usually stated that the chancel dates from the time of Henry VII., but a careful examination shows that there was a chancel built out at the east end of the wooden church at a far earlier date. There are patches of untrimmed flint work in the south wall of the chancel for about 2 ft. above the ground; a little of the same rough material shows at the east end; whilst on the north side there are fully 3 ft. of the same composition. The style of this kind of rubble work, with an abundance of mortar, particularly if compared with various other examples in Essex churches, points clearly to Norman days. As this district revived soon after the Norman conquest, there would come about a desire, even in this small place, for greater accommodation, and especially for greater altar space. Hence the throwing out of a chancel at the east end of a church, which the feeling of reverence for St. Edmund among the older and Saxon inhabitants would not permit to be otherwise molested. This Norman chancel sufficed up to the latter part of the XVth century, when it was rebuilt on the old foundations in the brickwork that was then beginning to be popularised as a material for church extension and improvement in various parts of Essex. The priests' doorway on the south side, of moulded brick, is a good example of about Henry VII.'s time, and the recessed window on the west of this doorway is of the same date. In 1845 this chancel was restored and a great deal of new brickwork introduced. It is quite easy to distinguish the bricks of the XVth century from those of the XIXth, which are here mingled together in the same walls. The older bricks measure 8½ in. long by 2 in. broad, whilst the modern ones are 9 in. long by 2½ in. broad. When the chancel was restored it must have been done somewhat heedlessly; an interesting and unusual shaft piscina, described and figured by Mr. Suckling, which used to stand in the south-east angle, disappeared.

The tower and spire at the west end are sometimes spoken of as if they were almost entirely modern, but this is a complete mistake. A study of the older timbers shows that it is a plain example of XVth century date. It is rather singular that the tower was not applied to the centre of the old log-hut gable end. It is about 12 ft. and a few inche square, and was placed nearly flush with the south wall, so that there is some space to the north of it where part of the old rebuilt gable end, with six graduated logs, still remains. The octagon broached spire is covered with shingles. In this tower there used to swing two bells, for, when it was visited by Edward VI. commissioners for the seizing of church goods on September 27 in the sixth year of his reign, they found "ij great bells in weight cccli. and di." They took off with them a variety of vestments, altar ornaments, and other church goods, but left for the use of the minister a silver chalice, a surplice, and a blue satin cope.

In the north-east angle of the nave stands a good panelled oak pulpit of hexagonal shape. On the centre panel facing west is the date 1698 and the monogram "I.H.S." let in in darker coloured wood; the base is new.

The chancel is entered by a new Tudor archway. Against the north wall is a mural tablet of alabaster in a well-designed border. The inscription is:—

"Here lieth Jone, sister to Thomas Smith of Mont, Knight, second wife of Alan Wood of Snodland in Kent, Gent, who livinge vertuouslie 66 yeeres died godly the xx of August 1585.

"Feare thou God and doe
As thou wouldest be done unto."

On the same side of the chancel is a tablet to William Hamilton Warren, thirty-one years rector, who died in 1825.

Against the opposite wall of the chancel is another mural tablet, to the memory of Richard Hewyt, a native of Eccles, another rector of Greenstead, who died in 1724. The inscription, as given by Suckling, is of exceptional interest, and refers to his father's faithfulness to Charles II. when in exile. The inscription is now almost wholly illegible; it would be a pious work to revive it.

In the churchyard, on the south side, close to the nave wall, is a large, flat, stone coffin-cover or sepulchral slab, with a slightly-raised line running down the centre. It is 6 ft. 3 in. long and tapers from 26 in. to 15 in.; it is probably of XIIIth century date. We believe it was moved here from out of the chancel at the time of its restoration in 1845.

The four windows of the chancel are filled with stained glass to the memory of William Smith, twenty-five years churchwarden of this parish; he died in 1871. The small north window has the effigy of St. Edmund, with the incident of his being shot to death pictured below. The border is filled with crowned E's.

Beneath the tower, affixed to the north wall, is a well-painted wooden panel of St. Edmund pierced with arrows. It measures, without the frame, 24 in. by 10½ in. The costume of the bowmen in the background shows that it is of late XVth or early XVIth century date; it seems to be of Flemish design. This panel was for some time kept at the rectory; it is well worthy of a better position in the church than against the dark wall under the tower.

In the British Museum is a privately-printed book called "Yearly Records of Pyrgo Park, Haveringe-atte-Bower, Essex, from 946 to 1888. Extracted and compiled by Montagu Browne." Among some notes on churches of this part of Essex

occurs the following note (p. 152) as to Greenstead :—

"The rood-screen is well-preserved XVth century work, and contains a representation of St. Edmund's martyrdom."

Possibly this entry may be a careless mistake, for the rest of the church notes in this book have several blunders. If there ever was a rood-screen in this church in comparatively modern times, it must have disappeared before Mr. Suckling's account of Greenstead was penned in the "forties." There is this to be said in favour of Mr. Montagu Browne's statement, namely, that the painted panel is about the size and shape of one that might well have formed part of the lower panels of a screen for a small church. If such a screen had been destroyed in some "churchwarde beautifying," this particular panel might well have been saved from destruction by some pious parishioner.

It may interest some to know that the registers of this parish, from 1561 to 1812, were privately printed by Mr. F. A. Crisp in 1892; a copy can be seen at the British Museum. They contain, however, no entry in any way relating to the fabric of the church.

NOTES.

The Philæ Temples.

A SUGGESTION recently made by Professor Forbes is that the construction of a dam at the third cataract would entirely obviate the necessity for raising the Assuan dam, and would thereby save the temples of Philæ from further submersion. The idea is an attractive one, but even assuming its practicability, we have good reasons for thinking it will not commend itself to Lord Cromer and Sir William Garstin, upon whom now virtually devolves the responsibility of deciding the details of the forthcoming irrigation programme. In the first place, we may point out that it was long ago decided by the Public Works Department that imperative reasons exist for the establishment of a single reservoir of ample capacity at the threshold of Egypt proper, and the hastily-formed opinion even of so distinguished an engineer as Professor Forbes will scarcely suffice to change the deliberate policy of engineers who have made Egyptian irrigation the subject of special study for many years. It must not be forgotten that the third cataract is some 420 miles south of Assuan, a distance involving considerable evaporation of precious summer water, and requiring about twenty-three days for the passage of water to the point where it is first required. Therefore the division of storage in reservoirs so widely separated would be undesirable, and would not secure for Egypt the condition believed to be absolutely necessary—that is, "to have near at hand, at the point where the Nile enters Egypt, a reserve of water to meet any contingencies which might arise." Moreover, the loss by evaporation in the two reservoirs would be nearly double that in the deepened reservoir at Assuan, owing to duplication of the exposed surface. Finally, we have the financial side of the question. The cost of a new dam would probably exceed 2,500,000*l*., whereas the Assuan dam can be raised for about 500,000*l*., a difference of at least 2,000,000*l*., to say nothing of the heavy annual charges entailed by the necessity for a second staff of officials at the new dam, which the Egyptian Government could not be expected to authorise for the realisation of a project that is not in accordance with the views of its expert advisers.

The Simplon Tunnel.

AT various times during the construction of the Simplon Tunnel work has been retarded by the influx of water from underground springs. In the autumn of 1901 a stream of water burst into the Italian workings, and, attaining a discharge of nearly 8,000 gallons per minute, speedily converted the two headings into canals. Several months elapsed before the flow could be overcome, and no sooner had this been effected than a tremendous fall of rock took place. Timber struts and shores, of 20 in. diameter, were repeatedly broken like tinder, and the boring machinery had to be dismounted on three successive occasions. Finally the unstable rock was held up by means of heavy steel frames placed at intervals of from 1 to 3 ft. apart. The experience of the Italians has been unfortunate throughout, for they have had to deal with floodings, rock slips, high temperatures, and exceedingly hard strata. It now appears that the turn of the Swiss engineers has come, as only last week a spring of boiling water was tapped, with a discharge estimated at 18,000 gallons per minute. This new influx has resulted, unhappily, in serious loss of life, and, in the opinion of a Swiss engineer who has investigated the condition of the workings, it is open to question whether the tunnel will ever be completed. At the present time we cannot accept this report as final, but it is undoubtedly most difficult to deal with a formidable spring of hot water in space so confined as that offered by the headings of the tunnel. As about 10 miles, out of the total length of 12 miles 458 yards, have already been driven, it would be singularly unfortunate if the final abandonment of the work were to become necessary. We still hope that the indomitable energy and great resources of the engineers, which have served to overcome so many difficulties in the past, may once more triumph over adverse circumstances.

The Third-Rail System of Traction.

THE fatal accident to a soldier who endeavoured to cross the line of the Liverpool and Southport Electric Railway last week, taken in conjunction with the recent fatalities on the Lancashire and Yorkshire and the North-Eastern Railways, raises the question of whether the third-rail system of electric traction is the proper one to adopt on railways. An unguarded third rail must always be a source of danger not only to trespassers, but also to guards and porters. The anxiety caused by fear of coming in contact with the rail will make them less careful in looking out for approaching trains, and so may also cause accidents indirectly. Where electric traction is adopted the trains are generally reduced in weight and run much more frequently, and thus the permanent-way men will have to keep a sharper lookout for trains, and at the same time be careful never to touch the rail. In some lines in America the third rail is protected by having pine planks fixed over it, and this not only protects the officials, but also is of great use in snowy weather. In this country, however, the permanent-way men apparently prefer working on the line with the third rail entirely unguarded, as they can make the necessary repairs much more quickly in this case. It seems to us that the third-rail method of traction has this inherent objection—that if you leave the third rail unguarded the line is dangerous to porters, etc.; and if you guard it effectively, then the permanent-way men are in danger owing to the limited time at their disposal in order to make necessary repairs. In our opinion, the best method will be one in which the trains get their current from a trolley wire supported at the side of the line, so that repairs can be made to the electric part of the system without interrupting the traffic and without undue haste. The permanent-way men in this case have only to look out for approaching trains, and there need be no fear of the traffic being interrupted by one of them dropping a spanner or a pick on a "live" rail. With this system, which is widely used on the Continent, very high alternating pressures can be safely used. It may be used also in conjunction with a 600-volt direct-current third-rail system, such as will be used by the Underground Electric Railways Company of London. The British Thomson-Houston and the British Westinghouse Company are both prepared to supply "series" motors which will operate equally well either with low-pressure direct current or high-pressure alternating. The overhead wires required for this kind of railway will be quite different from those used with tramcars.

Processional-road and the Mall.

A REFERENCE to the plan and two views published in our number of November 2, 1901, will show how Mr. Aston Webb's approved designs provide for a rearrangement of the railings and their gate-entrances which enclose the fore-court of Buckingham Palace. The designs embrace the abolition of the middle gates and the substitution of two gateways, one on either side of the Queen Victoria Memorial. The two side gateways will give access from the Palace to the new "Queen's-garden" and to the Processional-road beyond, as well as to the two new roads from the "Queen's garden" which communicate with Green and St. James's Parks, Constitution Hill, Birdcage Walk, and Buckingham Palace-road. The alteration involves a removal, which is now nearly completed, of the stone piers and railings and their reconstruction a short distance north-eastwards into alignment with the south-west side of the Memorial. Thus will disappear what has hitherto been known as the Sovereign's-gate, whilst the two new gateways will be fitted with the gates from the Secretaries'-gateway and a copy which is being made of them. When, in 1847, Blore enclosed with a fourth block the quadrangle of the Palace

as completed by Nash in July, 1837, the fore-court was enlarged on that side and enclosed with piers and railings designed by Decimus Burton, the sculpture being by John Thomas. Three years subsequently Nash's Marble Arch, erected in 1825-7 on the ground now converted as Queen's-garden, was removed to Cumberland-gate, Hyde Park.

The Bridge, Kingston-on-Thames. IT appears that the bridge is to be rebuilt, or at any rate reconstructed, in connexion with a project for running tramway-cars from Hampton Wick to Kingston market-place, and thence by the Surbiton-road to Ewell and Epsom. A wooden bridge at Kingston is cited in a close Roll of 7th Henry III., and, London Bridge excepted, it was the most ancient across the Thames. In 1607 a severe frost broke the wooden bridge, which Aubrey says had a length of 168 yds. Old charters and other records testify that from Queen Elizabeth's time, at least, until 1828 the bridge was toll-free. An Act having been obtained in 1825, the first stone of the existing structure was laid by Lord Liverpool on November 7 of that year, and on July 17, 1828, the bridge was opened by the Duchess of Clarence, afterwards Queen Adelaide. The Exchequer Bill Loan Commissioners, to whom the trustees applied for a loan of 45,000*l.* referred the plans, specifications, etc., prepared by Edward Lapidge, County Surveyor, to Telford, their Engineer, who made a favourable report; but, since the Act limited to 40,000*l.* the sum to be raised, Lapidge modified his plans accordingly. About that sum was expended upon the entire works, with the approaches, the bridge itself costing 26,800*l.* Constructed chiefly of brick, with ashlar of Portland stone, it consists of five elliptical arches; the middle arch has a span of 60 ft., with a versed sine of 19 ft.; the two arches on either side have spans of 56 ft. and 52 ft. and rise 18 ft. 3 in. and 16 ft. 6 in. respectively. The foundations were laid upon the substratum of blue clay which lies under all the river-bed at that spot. The bridge is 382 ft. long between the extremes of the abutments, and is 25 ft. wide between the balustrades. The gradient-rate of either incline is 1 in 40; the ratio of the piers to the span of the arches is about 1 to 6. The abutments are terminated with low towers or bastions; a cornice and balustrade, with the recesses or refuge-places that project over the piers, give bold relief to the general elevation. The lowest summer level of the stream falls to about 6 ft. below the springing line of the arches. Official reports made some years ago show that the control of the fabric was vested in a trust whose estate comprises various gifts connected with the revenues of the Corporation of Kingston; and the trustees, as lords of the manor, own the river's banks in the town, some of the aits, two-thirds of the bridge-wharf revenues, and gifts made for repair of the bridge, the rental of about 2,500*l.* being managed by two bridge-wardens. The average annual payment on account of the original loan has been between 700*l.* and 800*l.*; the bridge is now free from tolls. Lapidge exhibited a view of the bridge at the Royal Academy rooms in 1828. The Act we mention above is 6 Geo. IV., c. 125; the heavy cost of the shore works for the bridge was due to the taking of a fresh site a short distance up-stream from that of the old bridge.

Progress of the Steam Turbine. A FEW years ago the turbine, which in principle is the oldest form of the steam engine, was looked upon as a type of prime mover that could never come into general use, owing to its excessive steam consumption. Thanks to the indefatigable labours of Mr. Parsons, and of those who have followed in his footsteps, the efficiency of the turbine has been made to surpass that of the reciprocating engine, and in almost every department of engineering the new type of motor now finds extensive application. In marine engineering, as our readers already know, the turbine has been adopted with most satisfactory results, and it may be noted that the new turbine steamer *Manxman*, built by Messrs. Vickers, Sons, and Maxim for the Midland Railway Company, has established a record for turbine-driven merchant vessels during her recent official trials, as regards both speed and fuel consumption. Electrical engineers throughout the world are busily occupied in the construction of turbines for the equipment of generating stations, and mechanical engineers are devoting increased attention to the design and perfection of new varieties of the engine itself. A striking instance of the importance attached to the new branch of industry thus created is to be found in the announcement made this week by a firm specially identified with reciprocating engines that in consequence of unprofitable business the directors have decided to open up new branches of trade, one of the most noteworthy being the manufacture of steam turbines. That this company, holding the premier position in connexion with a certain form of steam engine, should thus be driven to the manufacture of a rival motor is indeed a triumph for the turbine.

Electricity in Building Operations. ACCORDING to the *Electrician* of last week, the erection of the new Home Office buildings in Westminster furnishes us with an object lesson of the relative advantages of steam and electric driving in building operations. We are told that steam and electric mortar pans are both being employed in doing practically identical work. Taking a week of fifty hours as a basis of comparison, it is said that the cost of the steam-driven pan is 2*l.* for coal and 2*l.* for labour, while the total costs of the electrically-driven pan does not exceed 25s. under the worst conditions. The large difference in the cost of the coal and the cost of the electricity must be mainly due to the fact that the electric motor is always ready to work. With steam, on the other hand, a large amount of coal has to be expended in raising it to the required pressure before operations can begin. A steam engine requires the constant attention of a driver, whilst a good electric motor can be operated by anyone by simply moving a switch. It is calculated that the adoption of electricity in working the cranes, etc., used in erecting this building has resulted in a saving of about 10*l.* a week. In our opinion, when electrical energy can be had from public mains in the neighbourhood of the building at a moderate rate, then electric driving is more economical than steam driving. Incidentally, electric driving has the advantage in the matter of cleanliness, and the operation of lowering heavy weights very slowly can be done with greater nicety. It has to be remembered, however, that electric motors should be put up by a competent electrician in the first place, as great care has to be taken, even with the so-called "enclosed motors," to protect them from dust.

The Motor Omnibus. LAST week the "trial" run of a new motor omnibus was heralded throughout the daily Press with a degree of innocent enthusiasm almost equal to that which might appropriately be excited by the practical consummation of some great and novel invention. What the public were expected to believe was "an interesting experiment to test the capabilities of motor omnibuses" was merely the demonstration in our backward metropolis of a fact thoroughly recognised in large provincial cities like Birmingham, where the advantage and practicability of the motor omnibus are perfectly familiar to all who use the public streets. The "trial" was no trial, and the "experiment" no experiment. To foreigners who visit our capital its sluggish conservatism in many respects must convey a very unflattering picture of national enterprise, while to provincials the same characteristic is a perfect laughing-stock. But in addition to the plethoric habit of London, regarded as an entity, we fear there is some hazy feeling of superiority, perhaps due to the enormous dimensions of the place, giving rise to the idea that things successful in little towns, like Glasgow, Liverpool, Manchester, and Birmingham, might break down under the responsibility and excitement attending their introduction to so important a city as the capital of the British Empire. However this may be, we are glad to learn that the day of the antiquated horse-drawn omnibuses is at last approaching its inevitable end.

Sanitary Condition of Whitehaven. IN July, 1902, Dr. Bulstrode reported to the Local Government Board upon an outbreak of enteric fever in the Borough of Whitehaven, and upon the sanitary administration of the Town Council. Dr. Farrar has now been instructed to report on the progress since Dr. Bulstrode's inspection. In respect to the water supply, he reports that the Council have now a lake works inspector who resides at the lake side, and submits to the Borough Engineer and Surveyor a weekly report upon the height of water in the lake, the condition of the gauge, the rainfall, and other matters. He also inspects and reports any nuisances which may occasionally arise in the vicinity of the lake. In regard to house drainage, it is admitted that in many cases drains pass under the houses, but the local committee maintain that in an

old-constructed town like Whitehaven it is impossible to avoid this. Whenever a defect arises in a house, the Council cause any drain which passes under it to be embedded in concrete and properly ventilated. There still remain, however, a large number of dwellings in which the water-closets are in altogether improper situations (*e.g.*, unventilated closets in cellars, opening directly into living rooms), and Dr. Farrar found several cases of tenements, the occupants of which could only reach their water-closet by going out into the street and round two corners into an adjoining court. The Town Council have, however, displayed considerable activity in remedying some of the more gross sanitary defects in courts and alleys by additional water-closets and improved ventilation and lighting; but, as many of the court houses consist of back-to-back tenements utterly devoid of through ventilation, the problem of ventilation cannot be considered to have been solved. Several courts have been provided with electric light, but far too many are still left in darkness. Dr. Farrar estimates that there are at least from 120 to 200 houses, mostly in back-to-back blocks, and in every case without through ventilation or proper lighting, which ought to be demolished, not only as insanitary in themselves but as obstructive dwellings.

A Munificent Offer.

A CORRESPONDENT draws our attention to the terms of an advertisement by the Borough Council of Paddington which has appeared in our columns, in which the Council ask for applications for an appointment as draughtsman in their Surveyor's office. The candidate is required not only to be a "neat draughtsman," but to be "experienced in sewerage and drainage works, the examination of plans, designs of works of construction (including those of iron and steel)," and not to employ himself (even out of his time apparently) in any other work whatsoever without the express permission in each case by a resolution of the Council. The terms of the requirements would almost imply that it was a surveyor that the Council wished to engage, rather than a surveyor's draughtsman; and to a person with these various and very important acquirements they offer the salary of 120*l.* a year! Whether the condition of supply and demand in the surveyor's profession is such that there are men with these acquirements who would be tempted by such a salary we do not know; but the contrast between the requirements and the salary offered is, at all events, not very creditable to the perceptions of the Paddington Council. If they have only 120*l.* to spare for an assistant in their Surveyor's office, they might at least have confined their demands to something more in keeping with the salary offered.

Changes at Finsbury-square.

AN imposing mass of buildings is in course of being erected at the west corner of the north side of the square, with an extended return front along the City-road. The premises are being built by Messrs. E. Lawrance and Sons, contractors, after Mr. Belcher's plans and designs, for the life assurance offices of the Royal London Friendly Society, and, we are informed, constitute the first portion of a scheme for rebuilding most of that side of the square as the leasehold interests in the adjoining property gradually expire. A similar change will also be carried out along the south side of the square, where No. 50, at the corner of Finsbury-pavement, has been rebuilt by Messrs. J. Greenwood and Co., contractors, after designs by Messrs. Gilbert and Constanduros, as the head offices of the London and Manchester Industrial Assurance Company, who removed thither two or three months ago. The new premises are part of a large block for which the plans and designs have been approved by the Ecclesiastical Commissioners, who own the freehold of the land. Finsbury-square was laid out in 1787-8, the houses being built by George Dance, the younger. Those on the west side have an ornamented and continuous façade. A branch of a well-known banking company occupies the house at the corner of that side, by Chiswell-street, which, we understand, was at first built for Caslon, the type-founder; the premises were subsequently taken by Lackington, Allen, and Co. for their famous print shop, the "Temple of the Muses," depicted in T. Tegg's large aquatint drawing of 1789. At the south-east corner Dr. George Birkbeck practised as a physician. He was the founder, with Lord Brougham, Bentham, Wilkie, and Cobbett, of the London Mechanics' Institution, and its first president from 1824 until his death on December 1, 1841.

Our Cathedrals.

MR. G. F. BODLEY'S short paper at the Church Congress, on "Cathedrals: their History and Use," is a very eloquent summary of the place which the Cathedrals occupy in relation to the history of the nation, and their effect on the mind of to-day. He suggests the idea that the Cathedrals were really built "by the will of the people," by united gifts of labour and money. In the case of York Minster, for instance, "the stone for the building was chiefly a free gift of the Vavasour family, while the Ladye Chapel was partly constructed by Archbishop Thoresby with the stone of an old palace at Sherburn, near Leeds. Thus we see how clerics and lay-people alike had their share in the erection of the Cathedral." Speaking of the educational effect of the Cathedrals to the modern mind, Mr. Bodley says:—

"We may be sure that our Cathedrals call out and foster the imagination of the young. I remember when a child being at York, and suddenly and unexpectedly coming into sight of the Minster. It was the first Cathedral I had seen, and I shall never forget the impression and the awe that the mighty fabric gave me. It seemed like a great cliff, wrought over with beauty and stamped with dignity. Such was a first impression.

"And age does not stale the effects that these great works produce on the mind. For there is a mystery and a well-nigh inexhaustible mine of interest about them. They bring us to our knees, and they elevate our souls. Their founders and their builders have long passed, but their work is potent and remains—remains to teach, to add beauty to a beautiful world, and to lift our hearts, with their lofty dignity, to a calm, a quiet atmosphere—with 'less of earth and more of heaven.'"

Indeed, it is difficult to realise what a difference there would be in our feelings and our associations to-day, if our great Cathedrals had never existed, or had been swept away before our time. They are one of the most important elements of national poetry.

The Leicester Galleries.

MESSRS. Brown and Phillips have on view at the Leicester Galleries a very interesting miscellaneous collection of water-colours by living and deceased artists of the English school. They are mostly small works, but include some sketches by De Wint and Collier which are very characteristic examples of the slighter and more rapid work of these two masters of true water-colour art. Then we have two or three examples of Prout at his best, especially the fine and powerful drawing of the temple of Vesta; an "Old Manor House" by Girtin; a "River Scene" by Cox, remarkable in its contrast between the tender and delicate treatment of the sky and the minute finish (very unusual with Cox) of the boat and figures in the foreground; a drawing of "Fishing Boats at Sea" by Cotman, which is curiously like a Turner sea-piece; Turner's own little drawing of "Nemi"; Varley's interesting drawing of the "Vauxhall" of his day, with old Vauxhall Bridge seen under the trees; and Collier's large and grand drawing of "Arundel," an old friend which we remember many years ago in one of the standard water-colour exhibitions. Among the works by living artists is Sir J. Linton's admirable scene of Gil Blas at the tavern, another old acquaintance—a work quite exceptional in the humour and character of the figures as well as in its thoroughness of execution. In contrast with this collection illustrating so much of the beauty of art, we are invited in the adjoining room to admire the ugliness and eccentricity of art in various works by Mr. Conder and Mr. W. Rothenstein. Mr. Conder's designs for fans and drawings of interiors show a remarkable feeling, no doubt, for colour, but there it ends; the rest is badly drawn nudes (drawing the figure being apparently of no consequence now) and not a little vulgarity of subject and suggestion; while Mr. Rothenstein's, though escaping this latter reproach, have not even beauty of colour. Yet we are invited in the elaborate preface to the catalogue to regard these as important developments of "the serious art which makes the delight of the world." If so, it is surely the worse either for the world, or for art, or for both.

The late M. Bartholdi.

THE death of M. Bartholdi, the sculptor, has naturally attracted a good deal of public attention, for the author of the colossal statue of Liberty at the entrance to New York harbour has in that immense and conspicuous work, the largest cast statue in existence, a continual memorial of world-wide fame. Yet we could hardly call him a sculptor of genius. He was a very clever artist, with evidently a great deal of energy and strength of will; but his fame is rather that of a producer of large than of great works; and there are many French sculptors who have modelled no colossi, whose death would leave a much more serious gap in the artistic world. Sculpture is not to be valued or estimated by acreage of surface.

as completed by Nash in July, 1837, the fore-court was enlarged on that side and enclosed with piers and railings designed by Decimus Burton, the sculpture being by John Thomas. Three years subsequently Nash's Marble Arch, erected in 1825-7 on the ground now converted as Queen's-garden, was removed to Cumberland-gate, Hyde Park.

The Bridge, Kingston-on-Thames.

IT appears that the bridge is to be rebuilt, or at any rate reconstructed, in connexion with a project for running tramway-cars from Hampton Wick to Kingston market-place, and thence by the Surbiton-road to Ewell and Epsom. A wooden bridge at Kingston is cited in a close Roll of 7th Henry III., and, London Bridge excepted, it was the most ancient across the Thames. In 1607 a severe frost broke the wooden bridge, which Aubrey says had a length of 168 yds. Old charters and other records testify that from Queen Elizabeth's time, at least, until 1828 the bridge was toll-free. An Act having been obtained in 1825, the first stone of the existing structure was laid by Lord Liverpool on November 7 of that year, and on July 17, 1828, the bridge was opened by the Duchess of Clarence, afterwards Queen Adelaide. The Exchequer Bill Loan Commissioners, to whom the trustees applied for a loan of 45,000*l.* referred the plans, specifications, etc., prepared by Edward Lapidge, County Surveyor, to Telford, their Engineer, who made a favourable report; but, since the Act limited to 40,000*l.* the sum to be raised, Lapidge modified his plans accordingly. About that sum was expended upon the entire works, with the approaches, the bridge itself costing 26,800*l.* Constructed chiefly of brick, with ashlar of Portland stone, it consists of five elliptical arches; the middle arch has a span of 60 ft., with a versed sine of 19 ft.; the two arches on either side have spans of 56 ft. and 52 ft. and rise 18 ft. 3 in. and 16 ft. 6 in. respectively. The foundations were laid upon the substratum of blue clay which lies under all the river-bed at that spot. The bridge is 382 ft. long between the extremes of the abutments, and is 25 ft. wide between the balustrades. The gradient-rate of either incline is 1 in 40; the ratio of the piers to the span of the arches is about 1 to 6. The abutments are terminated with low towers or bastions; a cornice and balustrade, with the recesses or refuge-places that project over the piers, give bold relief to the general elevation. The lowest summer level of the stream falls to about 6 ft. below the springing line of the arches. Official reports made some years ago show that the control of the fabric was vested in a trust whose estate comprises various gifts connected with the revenues of the Corporation of Kingston; and the trustees, as lords of the manor, own the river's banks in the town, some of the aits, two-thirds of the bridge-wharf revenues, and gifts made for repair of the bridge, the rental of about 2,500*l.* being managed by two bridge-wardens. The average annual payment on account of the original loan has been between 700*l.* and 800*l.*; the bridge is now free from tolls. Lapidge exhibited a view of the bridge at the Royal Academy rooms in 1828. The Act we mention above is 6 Geo. IV., c. 125; the heavy cost of the shore works for the bridge was due to the taking of a fresh site a short distance up-stream from that of the old bridge.

Progress of the Steam Turbine.

A FEW years ago the turbine, which in principle is the oldest form of the steam engine, was looked upon as a type of prime mover that could never come into general use, owing to its excessive steam consumption. Thanks to the indefatigable labours of Mr. Parsons, and of those who have followed in his footsteps, the efficiency of the turbine has been made to surpass that of the reciprocating engine, and in almost every department of engineering the new type of motor now finds extensive application. In marine engineering, as our readers already know, the turbine has been adopted with most satisfactory results, and it may be noted that the new turbine steamer *Manxman*, built by Messrs. Vickers, Sons, and Maxim for the Midland Railway Company, has established a record for turbine-driven merchant vessels during her recent official trials, as regards both speed and fuel consumption. Electrical engineers throughout the world are busily occupied in the construction of turbines for the equipment of generating stations, and mechanical engineers are devoting increased attention to the design and perfection of new varieties of the engine itself. A striking instance of the importance attached to the new branch of industry thus created is to be found in the announcement made this week by a firm specially identified with reciprocating engines that in consequence of unprofitable business the directors have decided to open up new branches of trade, one of the most noteworthy being the manufacture of steam turbines. That this company, holding the premier position in connexion with a certain form of steam engine, should thus be driven to the manufacture of a rival motor is indeed a triumph for the turbine.

Electricity in Building Operations.

ACCORDING to the *Electrician* of last week, the erection of the new Home Office buildings in Westminster furnishes us with an object lesson of the relative advantages of steam and electric driving in building operations. We are told that steam and electric mortar pans are both being employed in doing practically identical work. Taking a week of fifty hours as a basis of comparison, it is said that the cost of the steam-driven pan is 2*l.* for coal and 2*l.* for labour, while the total costs of the electrically-driven pan does not exceed 25s. under the worst conditions. The large difference in the cost of the coal and the cost of the electricity must be mainly due to the fact that the electric motor is always ready to work. With steam, on the other hand, a large amount of coal has to be expended in raising it to the required pressure before operations can begin. A steam engine requires the constant attention of a driver, whilst a good electric motor can be operated by anyone by simply moving a switch. It is calculated that the adoption of electricity in working the cranes, etc., used in erecting this building has resulted in a saving of about 10*l.* a week. In our opinion, when electrical energy can be had from public mains in the neighbourhood of the building at a moderate rate, then electric driving is more economical than steam driving. Incidentally, electric driving has the advantage in the matter of cleanliness, and the operation of lowering heavy weights very slowly can be done with greater nicety. It has to be remembered, however, that electric motors should be put up by a competent electrician in the first place, as great care has to be taken, even with the so-called "enclosed motors," to protect them from dust.

The Motor Omnibus.

LAST week the "trial" run of a new motor omnibus was heralded throughout the daily Press with a degree of innocent enthusiasm almost equal to that which might appropriately be excited by the practical consummation of some great and novel invention. What the public were expected to believe was "an interesting experiment to test the capabilities of motor omnibuses" was merely the demonstration in our backward metropolis of a fact thoroughly recognised in large provincial cities like Birmingham, where the advantage and practicability of the motor omnibus are perfectly familiar to all who use the public streets. The "trial" was no trial, and the "experiment" no experiment. To foreigners who visit our capital its sluggish conservatism in many respects must convey a very unflattering picture of national enterprise, while to provincials the same characteristic is a perfect laughing-stock. But in addition to the plethoric habit of London, regarded as an entity, we fear there is some hazy feeling of superiority, perhaps due to the enormous dimensions of the place, giving rise to the idea that things successful in little towns, like Glasgow, Liverpool, Manchester, and Birmingham, might break down under the responsibility and excitement attending their introduction to so important a city as the capital of the British Empire. However this may be, we are glad to learn that the day of the antiquated horse-drawn omnibuses is at last approaching its inevitable end.

Sanitary Condition of Whitehaven.

IN July, 1902, Dr. Bulstrode reported to the Local Government Board upon an outbreak of enteric fever in the Borough of Whitehaven, and upon the sanitary administration of the Town Council. Dr. Farrar has now been instructed to report on the progress since Dr. Bulstrode's inspection. In respect to the water supply, he reports that the Council have now a lake works inspector who resides at the lake side, and submits to the Borough Engineer and Surveyor a weekly report upon the height of water in the lake, the condition of the gauge, the rainfall, and other matters. He also inspects and reports any nuisances which may occasionally arise in the vicinity of the lake. In regard to house drainage, it is admitted that in many cases drains pass under the houses, but the local committee maintain that in an

old-constructed town like Whitehaven it is impossible to avoid this. Whenever a defect arises in a house, the Council cause any drain which passes under it to be embedded in concrete and properly ventilated. There still remain, however, a large number of dwellings in which the water-closets are in altogether improper situations (*e.g.*, unventilated closets in cellars, opening directly into living rooms), and Dr. Farrar found several cases of tenements, the occupants of which could only reach their water-closet by going out into the street and round two corners into an adjoining court. The Town Council have, however, displayed considerable activity in remedying some of the more gross sanitary defects in courts and alleys by additional water-closets and improved ventilation and lighting; but, as many of the court houses consist of back-to-back tenements utterly devoid of through ventilation, the problem of ventilation cannot be considered to have been solved. Several courts have been provided with electric light, but far too many are still left in darkness. Dr. Farrar estimates that there are at least from 120 to 200 houses, mostly in back-to-back blocks, and in every case without through ventilation or proper lighting, which ought to be demolished, not only as insanitary in themselves but as obstructive dwellings.

A Munificent Offer.

A CORRESPONDENT draws our attention to the terms of an advertisement by the Borough Council of Paddington which has appeared in our columns, in which the Council ask for applications for an appointment as draughtsman in their Surveyor's office. The candidate is required not only to be a "neat draughtsman," but to be "experienced in sewerage and drainage works, the examination of plans, designs of works of construction (including those of iron and steel)," and not to employ himself (even out of his time apparently) in any other work whatsoever without the express permission in each case by a resolution of the Council. The terms of the requirements would almost imply that it was a surveyor that the Council wished to engage, rather than a surveyor's draughtsman; and to a person with these various and very important acquirements they offer the salary of 120*l.* a year! Whether the condition of supply and demand in the surveyor's profession is such that there are men with these acquirements who would be tempted by such a salary we do not know; but the contrast between the requirements and the salary offered is, at all events, not very creditable to the perceptions of the Paddington Council. If they have only 120*l.* to spare for an assistant in their Surveyor's office, they might at least have confined their demands to something more in keeping with the salary offered.

Changes at Finsbury-square.

AN imposing mass of buildings is in course of being erected at the west corner of the north side of the square, with an extended return front along the City-road. The premises are being built by Messrs. E. Lawrance and Sons, contractors, after Mr. Belcher's plans and designs, for the life assurance offices of the Royal London Friendly Society, and, we are informed, constitute the first portion of a scheme for rebuilding most of that side of the square as the leasehold interests in the adjoining property gradually expire. A similar change will also be carried out along the south side of the square, where No. 50, at the corner of Finsbury-pavement, has been rebuilt by Messrs. J. Greenwood and Co., contractors, after designs by Messrs. Gilbert and Constanduros, as the head offices of the London and Manchester Industrial Assurance Company, who removed thither two or three months ago. The new premises are part of a large block for which the plans and designs have been approved by the Ecclesiastical Commissioners, who own the freehold of the land. Finsbury-square was laid out in 1787-8, the houses being built by George Dance, the younger. Those on the west side have an ornamented and continuous façade. A branch of a well-known banking company occupies the house at the corner of that side, by Chiswell-street, which, we understand, was at first built for Caslon, the type-founder; the premises were subsequently taken by Lackington, Allen, and Co. for their famous print shop, the "Temple of the Muses," depicted in T. Tegg's large aquatint drawing of 1789. At the south-east corner Dr. George Birkbeck practised as a physician. He was the founder, with Lord Brougham, Bentham, Wilkie, and Cobbett, of the London Mechanics' Institution, and its first president from 1824 until his death on December 1, 1841.

Our Cathedrals.

MR. G. F. BODLEY'S short paper at the Church Congress, on "Cathedrals: their History and Use," is a very eloquent summary of the place which the Cathedrals occupy in relation to the history of the nation, and their effect on the mind of to-day. He suggests the idea that the Cathedrals were really built "by the will of the people," by united gifts of labour and money. In the case of York Minster, for instance, "the stone for the building was chiefly a free gift of the Vavasour family, while the Ladye Chapel was partly constructed by Archbishop Thoresby with the stone of an old palace at Sherburn, near Leeds. Thus we see how clerics and lay-people alike had their share in the erection of the Cathedral." Speaking of the educational effect of the Cathedrals to the modern mind, Mr. Bodley says:—

> "We may be sure that our Cathedrals call out and foster the imagination of the young. I remember when a child being at York, and suddenly and unexpectedly coming into sight of the Minster. It was the first Cathedral I had seen, and I shall never forget the impression and the awe that the mighty fabric gave me. It seemed like a great cliff, wrought over with beauty and stamped with dignity. Such was a first impression.
>
> "And age does not stale the effects that these great works produce on the mind. For there is a mystery and a well-nigh inexhaustible mine of interest about them. They bring us to our knees, and they elevate our souls. Their founders and their builders have long passed, but their work is potent and remains—remains to teach, to add beauty to a beautiful world, and to lift our hearts, with their lofty dignity, to a calm, a quiet atmosphere—with 'less of earth and more of heaven.'"

Indeed, it is difficult to realise what a difference there would be in our feelings and our associations to-day, if our great Cathedrals had never existed, or had been swept away before our time. They are one of the most important elements of national poetry.

The Leicester Galleries.

MESSRS. Brown and Phillips have on view at the Leicester Galleries a very interesting miscellaneous collection of water-colours by living and deceased artists of the English school. They are mostly small works, but include some sketches by De Wint and Collier which are very characteristic examples of the slighter and more rapid work of these two masters of true water-colour art. Then we have two or three examples of Prout at his best, especially the fine and powerful drawing of the temple of Vesta; an "Old Manor House" by Girtin; a "River Scene" by Cox, remarkable in its contrast between the tender and delicate treatment of the sky and the minute finish (very unusual with Cox) of the boat and figures in the foreground; a drawing of "Fishing Boats at Sea" by Cotman, which is curiously like a Turner sea-piece; Turner's own little drawing of "Nemi"; Varley's interesting drawing of the "Vauxhall" of his day, with old Vauxhall Bridge seen under the trees; and Collier's large and grand drawing of "Arundel," an old friend which we remember many years ago in one of the standard water-colour exhibitions. Among the works by living artists is Sir J. Linton's admirable scene of Gil Blas at the tavern, another old acquaintance—a work quite exceptional in the humour and character of the figures as well as in its thoroughness of execution. In contrast with this collection illustrating so much of the beauty of art, we are invited in the adjoining room to admire the ugliness and eccentricity of art in various works by Mr. Conder and Mr. W. Rothenstein. Mr. Conder's designs for fans and drawings of interiors show a remarkable feeling, no doubt, for colour, but there it ends; the rest is badly drawn nudes (drawing the figure being apparently of no consequence now) and not a little vulgarity of subject and suggestion; while Mr. Rothenstein's, though escaping this latter reproach, have not even beauty of colour. Yet we are invited in the elaborate preface to the catalogue to regard these as important developments of "the serious art which makes the delight of the world." If so, it is surely the worse either for the world, or for art, or for both.

The late M. Bartholdi.

THE death of M. Bartholdi, the sculptor, has naturally attracted a good deal of public attention, for the author of the colossal statue of Liberty at the entrance to New York harbour has in that immense and conspicuous work, the largest cast statue in existence, a continual memorial of world-wide fame. Yet we could hardly call him a sculptor of genius. He was a very clever artist, with evidently a great deal of energy and strength of will; but his fame is rather that of a producer of large than of great works; and there are many French sculptors who have modelled no colossi, whose death would leave a much more serious gap in the artistic world. Sculpture is not to be valued or estimated by acreage of surface.

LETTER FROM PARIS.

IT appears that two Salons at Paris are in a state of war: the "New" Salon (now fourteen years old) and the Salon d'Automne, only a year old and already the subject of angry discussion. The first, which opens in spring, wishes to forbid its members to exhibit in the second, which opens in October. Having been a failure last year at the Petit Palais, the Salon d'Automne now aspires to the Grand Palais, where its success is very doubtful. Several members of the New Salon, among them such important artists as M. Besnard and M. Carrière, in spite of its formal regulation forbidding its members to exhibit elsewhere, wish to take part in the Salon d'Automne; and the new Salon (the Société Nationale), which is rather afraid of a rival, insists on the observance of its restrictions. The subject is exciting passionate interest among the Paris public; but it really resolves itself into a "*querelle de boutique.*" The two traditional Salons do not suffice for the ever-increasing number of exhibitors, nor content all the different artistic groups. Hence the succession of minor exhibitions which call themselves salons, attract a little of the attention of amateurs, and then disappear. The true and leading French artists of the day have nothing to do with these rivalries, and merely leave them alone.

The public are now able to see for themselves how much superior is the new Metropolitan station of the Place de l'Opéra to the fantastic designs—"style Guimard"—of the existing entrances to the underground stations. The Place de l'Opéra station is designed by M. Cassien Bernard, the architect of the Alexandre III. bridge, who has treated the exterior of the station in a very simple manner and with a low elevation. Instead of a fidgety iron-work design there is a stone balustrade in Louis Quinze style, on a curved plan, where a series of colonnettes alternate with blocks of polished marble. The whole is surrounded by a pavement of polished granite, of which the steps are also formed. The new station, which will soon be open to the public, has exit galleries so planned as all to lead into a large open staircase onto the Place de l'Opéra: and thus all the traffic of the three superposed lines can be worked with a single outer entrance, which is 9 mètres in width of opening.

Some years ago, when the Municipality of Paris was rather uncertain in its ideas as to the future use of the Petit Palais, an artist who was a specialist in sporting pictures wished to organise there a permanent exhibition of carriages, harness, and liveries of all dates. This was refused; but now, with the influential support of M. Detaille, the scheme seems likely to be revived at Versailles, where it is proposed to form, at the old "Écuries Royales," a collection of this kind, of which the elements exist already at Cluny and the Grand Trianon, where are preserved the State carriages which have been used by Louis XV., Napoléon, Charles X., Louis Philippe, and Napoléon III. There are private collectors of relics of this kind who it is believed will be willing to add to the proposed museum, either by the gift or the loan of objects of interest; and there is to be a section reserved for automobiles. If properly carried out and the objects correctly dated, such a museum will be of no little interest.

The demolition of the buildings annexed to the Bourse, and which so much disfigure its façade towards the Rue Notre Dame des Victoires, has at last commenced, and it is hoped that the opening out of the Bourse will also be accompanied by the setting in order of the Rue du 4 Septembre, which has been in a state of chaos, for some years, in consequence of the works connected with the Metropolitan railway.

M. Henri Toussaint has been commissioned to engrave a "frontispiece" for the diplomas given by the Société Centrale des Architectes, on which will appear the portraits of the founders of various prizes, Paul Sédille, Destors, Soufaché, and others. The commission has come from the united body of those who have received Société Centrale diplomas, who wish thus to honour the memory of the founders.

A new legacy for the assistance of young sculptors has been left by the late anatomical sculptor Jacques Talrich (whose death we mentioned some little time since). This gives the Académie des Beaux-Arts a permanent fund from which to assist, at their exit from the École, those who have tried for but have not obtained the Prix de Rome, and who often find themselves in a very difficult position. Sculpture is a costly and ill-paid art which stands in need of the continual support of the State or the municipalities, and young sculptors without any private means (which is the case with the majority) have a hard struggle before them.

The death is announced, at Nancy, of the eminent artist Emile Gallé, at the age of fifty-two. His works count among the best productions of French art of the XIXth Century. Gallé, who devoted himself specially to works in glass, terra-cotta, and wood, equalled the greatest names among the decorative artists of the past. His contributions to the great Exhibitions of 1878, 1889, and 1900 were of a remarkable character, as well as his exhibits at the Union Centrale des Arts Decoratifs and the Salons of the Société Nationale. His career has been prematurely cut short at a time when, in spite of illness, he was engaged in preparing a series of works for the coming exhibition at Nancy.

The death is also announced, at the age of sixty-three, of M. G. Allar, architect, of Marseilles. He was a pupil of Esperandieu, and Inspector of Works at the Cathedral of Marseilles and at the École des Beaux-Arts of the same city. He was architect of many private buildings, and had much success in various public competitions. In 1881 the Société Centrale awarded him their medal for domestic architecture.

The Société Nationale des Architectes has just awarded the prizes in its thirteenth annual competition, the subject being "A Hydropathic Establishment in the Suburbs of a Large Town." The jury awarded the first prize to MM. Eugène Chauliat and Marcel Oudin; the second to M. Alfred Schneider; the third to M. Jules Pin; and the fourth to M. Emmanuel Sélonier.

[The death of M. Bartholdi, the well-known sculptor, occurred since the foregoing letter was sent off.]

THE ARCHITECTURAL ASSOCIATION.

THE opening meeting of the new session of the Architectural Association was held on Friday, last week, in the meeting-room of the Association, at the new premises, No. 18, Tufton-street, Westminster, S.W. Mr. E. Guy Dawber, President, occupied the chair, and there was a very large gathering of students and members.

The minutes and nominations having been read, the following gentlemen were elected members of the Association:—Messrs. C. H. Yeoman, M. Botting, L. Furniss, G. L. Alexander, and C. Whitby. It was announced that the following gentlemen had rejoined the Association, *i.e.*, Messrs. J. A. Smith, L. Dennis, and C. R. H. Tyndall, and Mr. E. Prioleau Warren was elected a member by acclamation.

The President announced the following donations to the New Premises fund in addition to the amounts already published in the *Architectural Association Notes*, *i.e.*, Mr. C. W. Stephenson, 26*l.* 5s., and Mr. E. Thornton, 5*l.* 5s.

Mr. Lewis Ambler, Hon. Sec., announced that the Camera and Cycling Club will hold a meeting on October 11, at 8 p.m., when papers by Messrs. S. B. Bolas and D. M. Mackenzie will be read on "Westminster Abbey."

Mr. Ambler also announced that the conversazioni will take place on October 27 at No. 18, Tufton-street, Westminster. Invitations have been sent out with the recently-issued *Brown Book*.

Distribution of Prizes, etc.

The President then distributed the prizes, etc., gained by students last session, as follows:—

Mr. Maurice E. Webb, Advanced Class of Design, first prize, value 5*l.* 5s., Bronze Medal, and pass for Modelling Class; Mr. G. Drysdale, A. A. Travelling Studentship, value 25*l.*; Mr. A. Horsnell, A. A. Travelling Studentship, second prize, value 5*l.*, and Advanced Class of Design, second prize, and pass for Modelling; Mr. J. A. Hallam, A. A. Silver Medal and prize value 10*l.* 10s.; Mr. D. G. Round, Elementary Class of Design, first prize, value 3*l.* 3s.; Mr. F. J. Watson Hart, Banister Fletcher Bursary, value 25 guineas; Mr. C. R. Pinsent, Architectural Union Company's Prize, value 10*l.*; Mr. C. E. Hanscomb, A. A. Scholarship, value 5*l.* 5s., and first prize Geometry Class; Mr. W. A. Hodges, Andrew Oliver Prize, value 3*l.* 3s.; Mr. F. T. Bush, Andrew Oliver Prize, value 2*l.* 2s., and Studio Prize, Volume *A. A. Sketch Book*; Mr. C. R. Davy, Studio Prize, 2 Volumes of *A. A. Sketch Book*, and first prize Greek and Roman Class; Mr. J. H. Markham, Studio Travelling Studentship, value 15*l.*, and Studio Prize, Volume *A. A. Sketch Book*; Mr. T. Braddock, Studio Prize, Volume *A. A. Sketch Book*; Mr. H. M. Whiddington, Studio Prize, Volume *A. A Sketch Book*; Mr. M. R. Martin, Elementary Construction Prize; Mr. H. L. Samson, English Architecture prize; Mr. H. H. Christie, Mediæval and Renaissance prize; Mr. A. T. Groves, Elementary Physics prize, and Professional Practice prize; Mr. T. W. Watkins, Materials and Ventilation prizes; Mr. I. T. Sifton, Construction prize; Mr. P. G. Crawley, Drainage prize; Mr. S. H. J. Murch, Land Surveying Prize; Mr. A. Welford, Day School Travelling Studentship, value 15*l.*; Mr. A. N. Peckham, Day School prize, volume *A. A. Sketch Book*; Mr. R. C. Coulson, Day School prize, Volume *A. A. Sketch Book*; Mr. T. F. W. Grant, Day School prize, Volume *A. A. Sketch Book*.

President's Address.

The President then delivered the following address:—

Gentlemen—The present occasion marks an epoch in the annals of the Architectural Association.

It is the first time that an address has been made from this chair in a building devoted exclusively to the uses of the Association, and we may well feel proud that our efforts to attain this result have been crowned with such signal success. I do not wish to weary you with an account of how this has come about—all that is ancient history and was fully dealt with in the address of your President last year. It is my great privilege to declare the consummation of our desires has come to pass, and, after more than half a century's waiting, the Architectural Association has at last a home of its own.

For many years past, our growing needs and requirements, and the increasing roll of members, rendered the removal from our old and cramped premises in Great Marlborough-street a necessity—a change was bound to come sooner or later; so that when the Royal Architectural Museum premises were offered us, together with the leases, the Association most gladly took the requisite steps to avail themselves of the offer, and undertook to maintain the museum and to keep it open to the public as before, and I would like to take this opportunity of thanking Mr. W. H. Jamieson, our hon. solicitor, for the infinite pains he took in connexion with the transfer of the property. To meet our needs, the building required considerable alteration, but your Committee felt that this was the opportunity to obtain studios and lecture rooms, so that the work of the Association could be carried on properly without being hampered by lack of space. It was therefore decided to face the heavy outlay connected with the work once and for all, and have thoroughly useful and well-equipped premises. This most important work—the re-arrangement of the building—was entrusted to Mr. Leonard Stokes, and I feel sure we can congratulate both him and ourselves upon the successful issue of his labours.

In addition to premises of our own we have also an admirable collection of casts and models which originally formed the Royal Architectural Museum, and there is not the least doubt these will prove of great value to students and form a very fitting adjunct to a society such as ours. It will be a matter of great labour to arrange for the display of these casts in some sort of chronological sequence, but a start has been made, under the able direction of Mr. W. G. B. Lewis, and we hope in time not only to see the work completed, but a revised catalogue compiled, so that both the public and the profession may be aided in their researches, and take an intelligent interest in what is a most unique collection. This work, however, has not been accomplished without incurring heavy responsibility, and the indebtedness of the Association has reached a total of about ten thousand pounds. Of this amount over five thousand pounds has been subscribed, of which the R.I.B.A. most kindly contributed 500*l.*, and a generous donor has offered a further sum of a thousand pounds conditionally upon the balance being raised before the end of this session. We need, therefore, about four thousand pounds, and I feel sure all members of the Association and the profession will respond most generously to our appeal for help to clear off this debt. If members would bring the matter before any of those who are interested in the education of architects and the advancement of architecture, we might soon expect to be free from any liabilities of this nature. Apart from this the Association as a body is in a thoroughly prosperous condition. Our membership continues to grow year by year, during the past two sessions at the rate of over one hundred per annum.

It is especially gratifying to find old and eminent members of the profession wishful to enrol themselves in our ranks. Great and varied as our work is, the enthusiasm of all is well maintained. I feel sure a great deal of this is attributable in no small degree to the able guidance of

your retiring President, Mr. Henry T. Hare, whose unfailing energy, tact, and ability, have done so much during the past two years to forward in every way the interests of the Association. It is not too much to say that the Architectural Association, as a body, owes much of its growth and vitality to the admirable way in which, in the past, it has been served by its Presidents and Officers, who have spared neither time nor effort on its behalf, and in taking up the reins of office for the coming year, I feel a great responsibility devolves on me to maintain this lofty tradition.

Education and the Association.

The Day School, under the mastership of Mr. Hugh P. G. Maule, is now firmly established in its new quarters, and the comfort and convenience of the spacious studios is greatly appreciated by both students and instructors—indeed it would be impossible to find in London a more complete set of rooms adapted to the work of the school. It is now commencing its fourth session, and has proved an unqualified success, which must be a source of great gratification to our past President, Mr. W. H. Seth Smith, to whose initiative the Day School very largely owes its origin. It was a difficult task to fill the post of headmaster, which Mr. Arthur Bolton so well occupied, and which he relinquished after two years of ungrudging work. His was a labour of considerable difficulty in organising and inaugurating a definite curriculum. The selection of his successor, Mr. Maule, entirely justifies the high opinion your Committee had of his fitness for the position, and the Association has every reason to be well satisfied with the manner in which he is carrying on this onerous and responsible work. The main idea of the Day School is that pupilage should be preceded by some special elementary training, preparatory to entering an office. Many consider it desirable that a student should be grounded systematically and thoroughly in the rudiments of his work, that he may begin to study the history of architecture and its development in various countries, and obtain some insight into the principles of design and construction at the outset of his architectural career.

At the expiration of either one or two years in the school, a student entering an architect's office will have gained a sufficient elementary knowledge to be able not only to take an intelligent interest in his work, but to utilise to the fullest extent the results of his preliminary training. The advantages to a student who is equipped beforehand in this way must be obvious to all, and I am convinced that in years to come the school will be recognised as a great service to the profession at large. We have also this session established an Evening Continuation School, under the mastership of Mr. T. Frank Green, to enable students who have passed through the Day School course to carry on the work in a systematic way, concurrently with their articles in an architect's office.

I do not intend to deal in detail with the work of the various evening classes, but I do wish to draw the attention of members to the Classes of Design—both Elementary and Advanced—which are visited by many of the most eminent architects in London, who generously give their time to the service of the Association. It is a great advantage for a student to be able to work out a series of designs, to have these examined and criticised in open class, and to see how his work compares with that of his fellows. This not only promotes a healthy rivalry, but enables him to see the progress he is making and what his capabilities are, and I hope in the coming session that many more will join these and the other classes. Students should make a point as much as possible of doing this, and in some way or other taking advantage of the training the Association offers. The fees for these various classes represent capital well invested, and, if only from a commercial point of view, assistants can always command a larger salary if properly equipped. The Register of the Association shows only too clearly that this is so, as there are always twenty-five per cent. more non-members wanting berths than members.

The Architectural Association represents the oldest educational body dealing exclusively with the training of architects in the United Kingdom, and is, I think, the only Society in which teaching has been carried on systematically from its foundation in 1847. There are Chairs of Architecture at the Royal Academy, the Royal College of Art, and the Universities of London and King's College, and also Liverpool, Manchester, Glasgow, and Edinburgh, at some of which a regular course of study is pursued. Though there are no less than eighteen other architectural societies scattered throughout the provinces, it is only the Architectural Associations of Birmingham and Ireland that hold Classes of Construction, Design, and History. The Devon and Exeter Architectural Society, founded in 1890, have, however, established classes for the teaching of Design, and it has been arranged for some of our members to visit periodically and criticise the work—our valued past-president, Mr. G. H. Fellowes Prynne, undertaking it for the ensuing session. It is much to be desired that other societies would follow this example, for, although in many of the places where they exist there are technical colleges, schools of art, and institutes, yet these do not and cannot train architects in the systematic and thorough way which is felt nowadays to be a necessity.

The question of education occupies the attention of most thinking men, and, as a profession, we can no longer afford to allow our students to be trained in the haphazard methods of the past. It is much to be hoped that the report of the Board of Education Committee appointed by the late Council of the R.I.B.A., comprising, as it does, many of the soundest educational experts of the day, will result in the establishment of some definite scheme of training which can be accepted as a basis by the various teaching bodies throughout the Kingdom. I feel sure the Architectural Association would welcome any suggestions that would tend to bring its work into line with this new movement, and thereby further enlarge and extend its sphere of usefulness.

I regret to announce that eleven members have died during the past session, amongst them, only a few weeks ago, being Mr. C. K. Roe, one of the most promising of our day school students.

This year has been memorable, in that one of our members, a young and most talented one, has seen the inauguration of his design for Liverpool Cathedral take place. We most heartily congratulate Mr. George Gilbert Scott on his brilliant success, and the Association, as indeed the whole profession, will watch, with keen interest, the development of his great work.

The Laying-out of Streets and Diversity of Design.

We are living in a wonderful age of building, when houses, streets, great towns indeed, spring into being almost in the space of days. In London, large schemes are in hand, such as no previous generation has ever known, and which are changing the character of whole districts. The most conspicuous feature in this new architecture is its entire absence of uniformity or consideration of surroundings. Architects, with varying success, have given rein to their imaginations without allowing themselves to be controlled or influenced in any way by neighbouring buildings; so that our streets present a want of character and scale which is singularly unsuitable in a city such as this. That this should be the case where many of the buildings individually are most admirable, is lamentable, and I cannot help thinking that it is a matter for regret that in this country we have no Ministry of Fine Arts, or some consultative committee on art who could advise when sites come into the market, or buildings are pulled down, as to the form the rebuilding should take, or what improvements or modifications in the design would conduce to the future dignity and beauty of the City.

It is, perhaps, too much to hope that the London County Council will control the capricious talents of architects and builders in Aldwych and Kingsway, but the greatest opportunity of recent years will be lost if such sites are allowed to be covered with individual erections—the creations of commercial syndicates, too varied in style and material to give any dignity or character to their environment. The recent changes in the Strand have proved that a great deal of the beauty of Saint Mary's came from the fact that the church was so well fitted in style and size to the position in which it was built, and to the height of the houses around it. I venture to think this essential principle is not sufficiently regarded in most of the new buildings we see on all sides. This feeling of inequality and lack of proportion is more noticeable in our street architecture than in anything else—there is no settled tradition in building; no definite aim or standard in view, and all treat different things in different ways, and the "loudest" and most garish edifice attracts the most attention. This, again, is emphasised in the treatment of our shops, where massive buildings, many stories high, rest with no visible means of support upon huge sheets of glass, whilst the façades of many others are covered and disfigured by enormous letters and advertisements. It is indeed strange that we should, as a nation with some claims to taste and refinement, tolerate these shams and eyesores that mar and spoil the finest streets of all our large cities and towns.

I cannot help thinking we have lost a good deal in the beauty and consistency of our street architecture since the days when such men as the brothers Adam, Chambers, Nash, and the Woods of Bath gave us their quiet façades and street fronts, all based on some definite idea and planned on a big scale, and though perhaps slightly uninteresting to us to-day, yet possessing dignity, scale, and symmetry. In street architecture the mass should be the main idea and the individual building should be subsidiary to the general design, but exactly the opposite seems to be the prevalent idea to-day, and one cannot help looking forward with some degree of misgiving to the result of such experiments as we see in Regent-street, which break the simple lines and grouping of what, however much its monotony may be abused, possesses some claims to design on a monumental scale.

Without doubt, all this variety, this diversity of idea and design which we see everywhere throughout the country, is attributable to our lack of architectural education in the past—we have not learned in any school, nor on any method, and hence our architecture, like our training, is individual and haphazard, everyone building what best suits his taste, just as our students study or pick up their ideas in a like manner. On the other hand, in essentially domestic architecture, this country stands pre-eminent. Our country houses possess a character and quality of which we may well be proud, and in this branch of our art a commonsense and legitimate use of material is producing a style that stamps the building of to-day. In municipal architecture we have also vastly improved during the past decade, and many of our modern buildings are well worthy of comparison with the works of masters of bygone years.

But as a nation we have quite failed to recognise the importance to the community of well-thought-out schemes of building and their environment on a large scale. We lack in England that spirit of civic pride which is so pronounced abroad—a pride in the beautifying of our cities and towns that makes one vie with the other in a display of noble buildings, dignified squares, and that co-operation of architect, sculptor, and painter, which alone can produce great and noble works of art. The least observant cannot fail to be struck by the feebleness of conception shown in dealing with the various sites that come into the market. It is deplorable that they should be regarded merely as commercial speculations, to be covered with buildings with neither character or individuality, and without the least regard for their surroundings, and perhaps more than anywhere else this is seen in the development of our suburbs. On the Continent this problem is dealt with in a systematic way, and the various municipal authorities prepare the lay out of the general scheme, the lines along which the extension is to take place and the proportion of the whole site which may be covered by buildings. It is a great pity that our English town councils do not study the admirable work of town extension now being done in Germany, and do not obtain Parliamentary powers to do similar work here; our towns might then be developed and improved on broad and dignified lines instead of the haphazard way we now deal with a question that is worth far more consideration than is given to it.

In this country the interests and rights of the individual are so jealously guarded that it is almost impossible to effect improvements, so that it is utopian to hope for the wide avenues, open spaces, gardens, and fountains, such as we see and admire in foreign cities. A longing for light and air, though unexpressed on the part of the public, is evident from the desire shown to live away from the over-crowded centres of our towns

—to spend some few hours in the outskirts, where sufficient air space can be given to the houses, and where streets can be wide and open spaces provided. But unfortunately the country surroundings of our towns and cities are so rapidly becoming alike, so levelled down to one dull cosmopolitan stamp, that the people who live there forget, or never realise, that there are towns and cities which can boast of long antiquity and a noble history, and contain ancient and venerable buildings. They form as they grow up their impressions of architecture from that they live amongst and see on all sides, and if their surroundings are commonplace and mean, can it be wondered that by them architecture is regarded with indifference, and that beautiful buildings arouse no feelings of reverence and appreciation?

It was estimated in the *Times* recently that London suburbs were spreading and filling so fast that as many as nine hundred thousand people settled in them, in new houses, in ten years; and that to Greater London every year is added a city the size of Norwich! It is difficult to realise such a fact when we contemplate it seriously and think of the old cities of mediæval days, crowded with beautiful buildings which cost long years, even centuries of toil and thought to create, when building was for all time and architecture a living force. To-day, when these communities grow like mushrooms, I feel that this is almost a national question, and, unless some steps are taken to plan our new towns and their surroundings on better and more artistic lines, that architecture, as an art, will very greatly suffer.

Experiments have been made in recent years in this country, of building and laying out towns and villages on some artistic basis, and with very satisfactory results. The paper that was read last session on the Bournville settlement, showed that these buildings could be erected to pay a fair return of interest for the outlay, and entirely disposed of the fallacy that to build artistically is more expensive than otherwise. There can be no doubt that the influence of communities such as these must eventually have a great effect on the taste of the public. But unless this question of the extension of London suburbs is dealt with on some such lines, we shall be surrounded by a belt of appalling monotony and ugliness, as every suburban extension makes the existing suburbs less desirable.

Building By-Laws.

I have up to now dealt with towns and cities, but there is another thing that affects our present-day architecture, especially in country districts, and that is the building restrictions enforced in nearly every part of the kingdom. I make no apology for introducing the subject before such a society as this, as its effect on the work of the country is wide and far-reaching—to architects these by-laws are only too well known, but the public do not realise in the least the baneful and cramping effect they are producing. Buildings in cities and populous towns must of necessity be under conditions, but in country districts these restrictions should be relaxed, as the circumstances are entirely different. That the same rules framed originally for dealing with buildings in crowded cities should be applied indiscriminately all over the kingdom, and that only certain materials should be used in particular ways, not only tends to make our architecture lifeless and uninteresting, but causes the neglect and discouragement of many of the old crafts and methods of building that made our country districts so picturesque and interesting. It is now frequently only on large private estates that building can be carried on without interference, for, owing to the extended powers granted to the Urban and District Councils, and the wide areas they cover, properties miles away from the nearest town or village, and in many cases entirely isolated, are now compelled to conform to these vexatious restrictions. Surely the time has come when some broad and sensible regulations should be made, and these unnecessary and mechanical by-laws modified, which are of little use in preventing jerry building, but which harass all good designers, besides adding largely to the cost.

These by-laws, again, are killing the last lingering country crafts still in use, just as the so-called "improvements" have changed the surroundings of the poorest peasant. He now has no distinction of dress; his antique smock has been discarded for the cheap tweed suit, his wooden clogs for ready-made boots. In his work he no longer uses the scythe, the sickle, and the flail, but has become a mechanic, and does most things by machinery. His cottage, too, is changed, and is built now in depressing rows, after the ugly model laid down by the Local Government Board; the open hearth has given place to the stove, the red-tiled floor to linoleum, and the old-fashioned lattice casements to sash windows and coloured glass—all things that doubtless conduce to his material advantage, but certainly to the great loss of picturesque effect.

Of course it is idle to wish for those old days to return; circumstances are altered, and as architects it is imperative for us to keep abreast of the times, but I would urge you to remember that there is an architecture for the country as for the town, and to bring the one into the peace and quiet of the other is altogether out of place. Each building should be treated with due regard to its position, aspect, and environment as a separate problem, and also with reference to the local materials of the district. It is the employment of so many and varied materials, out of all harmony with their surroundings, that has done so much to destroy the local styles and characteristics that once made all country building in England so beautiful. Many are inclined to reproach the public for their apathy and lack of sympathy with the architecture of to-day, but does not a large amount of the fault lie with architects themselves? The public judge architecture by what they see around on all sides, and when we look on the vast amount of building throughout the country erected thoughtlessly, hastily, and with an entire absence of taste, much of it, indeed, done by men who do not claim to be architects at all, it is not to be wondered that the estimation of such work should be low, and that the press of this country should treat it so indifferently.

Architectural Design.

Gentlemen, all these are broad questions not unworthy of your careful consideration, and though they may appear to our younger members as dry and uninteresting, it is essential that they should be conversant with such matters, which in after years will force themselves on their attention. But do not believe that architecture has vanished as the pessimists say, for at least we are not satisfied with its substitute, and though houses and costumes perhaps fall short of mediæval grace and colour, yet both are tending to become more seemly and convenient than those our forefathers knew. Slowly, but surely, we are striving for, and I think arriving at, that combination of beauty and utility wherein lies the truest, perhaps the only true art, and we have to-day an ever-increasing body of able and thoughtful men, who are doing work that is worthy of our highest admiration, and which is awakening the interest of the public in an art which for years past has been regarded with comparative indifference. In architecture, decoration, and the plastic arts, there is a strong and virile movement permeating the country, not only to treat material sensibly, but with freedom from the fetters of bygone schools of design. It lies in your power to forward this movement, to train your hand and eye, to study and labour in the profession you have chosen, remembering always that as the coming generation of architects with you rests a great responsibility. I would have you think of architecture from a national standpoint as a great power, and make up your mind from the day you enter the profession to devote yourselves to the uplifting of the noblest of all the arts. Your work will be your greatest recompense, and if you throw your heart into it you will find it a never-ending pleasure and engrossing pursuit to the end.

Look at things largely and try to think in the mass, and do not design your buildings as separate elevations, but picture them in the round, as imaginary buildings, that you can feel and handle, and plan out the surroundings, and the environment, so that the whole is complete in every way. If you accustom yourselves to this habit of thinking of your designs as a whole, you will be surprised at the grasp of idea it will give you and the increased pleasure you will get out of your work. Study the work of our best living men whenever you have the opportunity, as well as of those long since dead, and do not neglect the prosaic present for the picturesque past.

Whenever you see a beautiful building or work of art, either one just completed or an old one coloured by the mellowing hand of time, one that instinctively impresses you by its sense of proportion and fitness, try and analyse it and find out what it is in its conception and construction that produces this effect. The cultivation of this habit of analysing everything you see, of dealing with actual existent facts, will help you to design and plan far more than studying books and illustrations.

The reason we admire old work so much is, I think, partly sentiment and partly because it is, as a rule, thoughtful and honest—there is a feeling of reposefulness, of satisfaction and charm that so much modern work misses, and it is this spirit, this intangible something that one feels but cannot express in words, that you should strive to attain and which will give character and beauty to your work. It is the spirit and the thought behind the design that makes a beautiful building, and the more thought you put into your work the better and nobler will it be.

Sketching and Measuring.

So much is being done nowadays to encourage practical training and technical education that many are apt to neglect the more artistic side of their work. The recent Exhibition of holiday sketches and drawings, at the Royal Institute of British Architects was quite a revelation, and showed that architects in daily practice can yet produce most clever and artistic drawings and sketches. By some of our younger men, sketching and measuring, I understand, is not nowadays in favour, as it tends to keep alive that interest in the traditions of the past which many consider harmful and cramping. But, in my opinion, there is no better training for an architect than the study and analysis of buildings, both old and new; it helps you to cultivate a sense of proportion to appreciate the beautiful in art, and, more than anything else, the means by which these results were attained.

Apart from anything else it teaches you to draw in perspective, to see your buildings in the round, a point I have already urged. It is an invaluable aid in designing to be able to draw your schemes clearly and rapidly, for, as you know, designs which look well in elevation, often look very different in perspective. Cultivate a good style of draughtsmanship, but remember that the object of all architectural drawing is clearly to explain your designs to those who will carry them out, so that all tricks and mannerisms should be avoided which do not convey any practical meaning.

In these days, when travelling is so easy, you should take every opportunity of studying and comparing in each country you go to the different ways in which similar problems are treated, and the materials and workmanship with which they are carried out; this will broaden and enlarge your mind, and you will gain many valuable lessons in design and construction. But do not sketch or measure with the object of copying old forms and features, for mere servile imitation is a sure sign of decadence and lack of creative force. At the same time avoid going to the other extreme, and in your efforts after so-called originality becoming "banal" and grotesque. Guard against being carried away by the love of the pretty and picturesque, the passing fashion of the hour, and recollect that eccentricity is not synonymous with genius. Do not worry over trifling details, trivial mouldings, and such things; the greatest and noblest buildings and those that impress us with their breadth and dignity, as a rule, are very simply treated. You know that ornament must follow good construction, and that this again must be based on the proper use of material, and, though the tendency of the day is to try to be original, to produce something fresh and striking, yet I venture to think, and indeed hope, that much of what we see around us is only ephemeral and will not hold its place in years to come, as representative of our architecture to-day.

Beauty in architecture does not result from richness of material and profusion of ornament, but from elegance of form and proportion, harmony of colour, and perfection of execution; and in a large measure from the intelligent application of material to its proper purpose. Many do not sufficiently remember this, and forget that all materials have their limitations and uses; so consider well the suitability of your designs to the materials you would build them in. Details and features that are right in one are wrong and out of place in another. It is unnecessary to urge

you again to err on the side of simplicity and restraint in your work. Everyone can crowd his design with meaningless ornaments and detail, but few have the power of being able to know exactly what to use and what to omit. This can only be gained by careful study, by thought and experience, and though at times you may get discouraged and feel that your work is at a standstill and you are not improving, yet this very dissatisfaction may be the means of benefiting your work in the future.

It will encourage and help you, if you will devote some of your leisure to reading the lives and biographies of our great architects and artists. You will find that they had the same troubles and difficulties to overcome that you are bound to meet with in your career, and that they learnt in the hard school of experience, just as you will do.

You should lose no opportunity of visiting buildings in progress, and of going to see workshops and accustoming yourselves to actual materials and how they are used. The spring and summer visits arranged by the Association to buildings are admirable, and should be better patronised than they are. If students could get a few months, or even longer, on a building in progress, the advantages would be inestimable, for there is nothing that is so useful as practical knowledge gained first hand. This, again, bears on that very debatable question of craftsmanship, on which several papers have been lately read.

The Function of an Architect.

I cannot help feeling that if a man means to be an architect all his time and thought must be concentrated on his work and in that direction alone, and to attempt to make himself master of any of the subsidiary crafts, to work with his own hands on buildings of his own is a mistake. I have never been able to ascertain that any of the greatest architects of the past were craftsmen in the sense that we use the word to-day, and I do not think that any work in any of their known buildings can be pointed to as actually executed by them. The function of an architect should be to design and have the control of the entire building, to be the master builder in fact, and to be conversant with all the work being done. He should, as far as possible, have a knowledge of the technique of the various trades and crafts, and be able in a general way to direct and control them all, but more than this seems unnecessary. To concern himself personally with matters of actual craftsmanship must be to the detriment of his buildings, because an architect cannot carry out the multifarious duties required to-day and find time to do these things as well; though of course if an architect wishes to work with his own hands, and has a tendency that way, he will doubtless produce excellent results, but the idea in buildings of any magnitude or importance seems out of the question. Do not be led astray with theories such as these, but try and gather round you artists and craftsmen in the allied arts, who understand and sympathise with your aims and who will work with you. That is what all our great architects have done and what we should try and do to-day.

In conclusion, cultivate that spirit of comradeship with your fellow students which has always been one of the chief aims of the Association, and if you possibly can, take some part, however small, in the good work it is doing. The aim of the Association has always been to help its members, and this is the spirit that has enabled it to maintain its almost unique position. It may be your lot to stand by the wayside and see others pass you in the race of life, for its prizes are only for the few; but do not be discouraged, for if you do the work, however small, which comes to your hand to the best of your ability and power, it will not only bring its own reward, but will help and encourage those around you to follow your example.

Mr. Aston Webb, R.A., said he felt proud that it had fallen to his lot to propose, on his own behalf and on behalf of that large gathering, a most hearty vote of thanks to the President for his most admirable address, on what, without exaggeration, might be called, so far as the Association was concerned, an historic occasion. They had all dreamt for years of a home for the Association, and that night they woke up from their dreams to find it a reality. He spoke with a little sadness, because he felt that the time had come when he ought to cease to play that *rôle*, and on their opening night, therefore, he was afraid this would be his first and last appearance on the Tufton-street stage. He did not think there was a single word in the President's address with which he did not entirely agree. It was only to be expected that the President should refer to the architect to whom they were indebted for the conversion to their uses of that building, and he thought they could all congratulate Mr. Stokes on the happy issue of his labours on their behalf. He hoped they would long occupy the premises, and in that connexion there was a little story he might tell. A judge had been doing a great deal of work to his house, and a friend said to him, "I suppose you have a long lease of the house?" The judge replied, "Lease! A lease is no use to me. I have got the freehold, and I mean to see it out!" The Association, if carried on with the vigour with which it is to-day, would certainly see its lease out, whatever length that lease was. There was the little doleful point the heavy financial deficit to refer to, but the Association had never yet been beaten, and he did not for a moment suppose it would be beaten in this matter. A magnificent offer (there were not many architects in London or elsewhere who could make it) had been made by an anonymous gentleman, and he (the speaker) would, on the same conditions, be glad to make a modest addition of 50*l.* to his donation. The President had made one alarming statement, *i.e.*, that the membership of the Association was increasing at the rate of 100 a year! It really was a serious matter for architects generally that there should be this increase. To another gentleman the President had mentioned, Mr. W. H. Seth-Smith, a great deal was due for starting the Day School of the Association. Mr. Seth-Smith's scheme when it was first proposed did not, perhaps, receive that support it might have had, but by persistence and perseverance Mr. Seth-Smith carried it through, and the Day School marked a very important departure in the education of architects and would be one of the most beneficial things that had ever been done for the education of young architects. It had already proved a success, and as time went on it would be found to be indispensable, and it would be a matter of wonder how architects ever got on without preliminary training before entering an architect's office. The address referred to a matter that greatly interested him, *i.e.*, the subject the Board of Education was now considering—a general scheme for the education of architects. That Board consisted of many who had been known for a long time to take a great interest in the subject, and he believed and hoped that the deliberations of the Board would be of some use; but it could not be of use unless the educational bodies of the country assisted the Board, and it would be a great encouragement to think that the Association would be ready to consider suggestions which might be made. If the Board had the co-operation of the Association, as he believed it had, in the one object, *i.e.*, the improvement of architecture, a great deal of good would come of it. Architects had been going on for some time on a certain system, and it seemed to him and others that the time had come when they might take stock of what they had done and also see if some improvement in the architectural curriculum could be made. His own feeling was that the system on which they had been working had tended rather to the exercise of memory on the part of students than to the exercise of thought and judgment in the design itself—that they had tended rather to the study of details and had omitted the great problems which presented themselves to all architects, whether on a great or small scale. In his student days, when they entered a church they looked at the door, took a sketch of the jamb and the arch moulds in order to send a little drawing to the Architectural Association Sketch-book; when they went inside, if there was a screen they took a sketch of the carving and perhaps one or two of the mullions, and generally looked out little bits which would form an easy and useful little sketch. Very often they missed perhaps the whole interest that the church may have possessed, as he was thinking the other day when he was in a west-country church. He noticed, what was to be seen in many west-country churches, that the nave and chancel were of the same height; but, what was not so often the case, the transepts were also the same height, which gave the architect the opportunity of putting a barrel ceiling over the nave and chancel, and also over the transepts, so getting a groin at the intersection over the nave; the arcade was continued straight through to the chancel arch, but the wall was not carried up to the roof, so that one saw the roofs of the transepts over the arcade, giving a delightful and unusual perspective effect. What they wanted to teach students to see and understand was the scheme of the whole thing; the detail was a matter as to which the individual feeling and character of the man who designed the church should be left, to a great extent, unrestrained. Students would learn more from the general design and scheme of the architect of buildings visited rather than in looking at small details—mouldings, carving, and such like. The President had touched on another subject in which he (the speaker) had taken much interest, *i.e.*, the desirability of some control, or some advice, in the laying out of towns and cities—both new and where great alterations are in hand. The subject had been sympathetically received by the present First Commissioner of Works, and it was quite possible that, if the profession supported the idea, that in time something of the kind might be obtained. They all regretted the stage in which the matter of the great new street of the London County Council stood. There was the competition for the selection of a design, the design was selected, but then no further action had been taken upon that. That was a matter of great regret; and, although they all knew that the London County Council were anxious to do the best, he should like to see some expression of opinion amongst architects that more decisive steps should be taken before it was too late to prevent that great street being built on in the style described in the President's address. During the last two years an important Commission had been sitting in reference to streets and traffic, and, as far as he knew, only one architect had been called to give evidence, and, as far as he could gather, the evidence of that one witness gave more suggestions than nearly all the others put together on the general lay-out of a city. It might be an ideal scheme, but it had the germ of an idea, *i.e.*, radiating roads from London to the suburbs which would, to a great extent, redeem London from that monotony and dulness which the President had so properly objected to. He had always thought that it is a most unfortunate thing that the municipal bodies of the cities and towns of England had dispensed more or less with architects as their advisers, and had engaged surveyors instead—absolutely necessary gentlemen in certain work; but, after all, in the formation of new streets, etc., there was something more required than the convenience of traffic and excellence of drainage; there was the question of æsthetic appearance, and the man who could give the best advice on that was the man who had been trained in such matters, and he was, generally speaking, the architect. That brought them to the final duty of the architect, which was to beautify—the final aim of the architect was not only to make a building convenient—that was essential, but it was not architecture. The final goal of the architect was not only to build well—the builder could do that—and that too was absolutely essential, but it was not the highest point. It was not that he should conclude his work at exactly the estimated cost—of course, that was what they all did. No, the highest aim of the architect should be what they often found so difficult and what they were always striving for, *i.e.*, that there should be beauty in the buildings they put up, and that was what people had a right to expect from architects. The opening meeting of a new session of the Association would not be complete without quoting their motto, *i.e.*, "Design in beauty and build in Truth." The two things were synonymous; the poet had said: "Beauty is Truth; Truth, Beauty." "That is all we know upon this earth, and all we need to know."

Mr. H. L. Florence, in seconding the vote of thanks, congratulated the President in occupying the chair at the commencement of a new phase of life of the Association—a phase which he hoped would be crowned with success for a long period. As to the President, they had not only been encouraged by his precepts that evening, but they knew the admirable buildings he had carried out in which they could see the reposeful charm the President had referred to and the happy English character he had given to all his works. A considerable portion of the address had been taken up in the consideration of big problems; for instance, the development of large towns. All towns after a time needed

reconstruction and redevelopment, as could be seen to a far greater extent in some foreign capitals than in London. There were many opportunities in which a more united effort and a more supreme control would doubtless be advantageous, but at the same time this was not always the case. He had just been reading that in New York there was a municipal Art Committee and other well-known and powerful art committees which were hopelessly at loggerheads on the subject of a new bridge. One committee had chosen one design and another committee another design, and the erection of the bridge might be indefinitely postponed. So that the committee proposed by the President might not be an unmixed blessing. What might happen they saw to some extent every year in London. We had an annual exhibition of Art—painting, sculpture, and architecture—the works constituting which were judged solely by artists distinguished over all others in their separate spheres; but he thought he was right in saying that this did not result in an unqualified success. In many instances far superior works to those accepted and put in prominent places were rejected. Again, the practice of leaving matters of art and taste to the decision of assessors did not meet with unqualified approval, and it did not follow that those who were supposed to be, and indeed were, eminent in art and quite capable of giving individual opinions on such matters were those most qualified to determine important competitions or great public improvements. A union of qualities was required for the purpose which was rarely met with in those who devoted their attention to one particular kind of art. The circumstances in which architects of the past built were so different from the circumstances of to-day that there were few neighbourhoods in which schemes on old lines could be successfully carried out now. The tendency now is to build to far greater heights, and while streets were much the same in width, it was obvious that the treatment of the lower stories of buildings must be modified in order to get that light which was essential to making buildings suitable for their purposes. That would account for some of the deficiencies in some modern buildings in London. As to broadening thoroughfares, that invariably led to the displacement of a great many inhabitants, who were accommodated in the immediate suburbs of large towns, where the result was generally interminable and unlovely lines of streets. It seemed to him that some more determined effort should be made to preserve the old houses and grounds in London and such cities—that was to say, the old houses and the many acres of ground attached to them in such neighbourhoods as Clapham, Denmark Hill, Peckham, and Dulwich. If these houses and grounds had been preserved and kept as open spaces, a work would have been done which would have been of lasting benefit, and London would have been surrounded by agreeable neighbourhoods; there would have been better sanitation and health, and Londoners would have had more joy in living than they have now.

Mr. H. T. Hare said he should like to congratulate the President on the position he held that night, and to say how proud the Association was to have him in the chair. This was an historical day for the Association; it marked a distinct step in advance—a very serious step, which had been taken after due consideration, and there could be no doubt that the position of President involved a very great deal of responsibility and a very large amount of hard work and application, but they felt sure that the destinies of the Association would be safe in the hands of their President. As to the deficit on the building, the very generous offer which had been made would, he hoped, lead to other generous offers, and that the whole of the amount required would be wiped off by this time next year. As to the development of cities, that was a question which concerned architects very nearly. The President had referred to the desirability of buildings in streets having some uniformity, and with that a great many of them would agree to the fullest extent; but unfortunately there was a great diversity of opinion in the matter, and he frequently heard architects and people who were interested in the arts express the opinion that London is the most beautiful of cities and that its beauty is largely owing to the fact that there is no uniformity—that you never know what you are going to meet as you go along the streets. In his opinion that view was entirely wrong for a large city, but while this diversity exists amongst people who ought to know better we could not wonder that the authorities did not take a strong line in directing the progress of building operations in that direction, and this want of taste on the part of a certain number of people was almost entirely due to the fact that up to now we have had no systematic course of education for architects—no standard of taste for architects. Almost all other countries have a definite course of education for their architects, and that tended to the formation of definite views and standards, and that was what the establishment of the Association school might ultimately lead to. Of course, before that could be accomplished the Association must become a much more important institution than it is at present, and he had no doubt that it would grow until it became one of the leading influences in the education of architects. As to the cramping by-laws which exist in London and the country—more particularly in the country—that was largely due to the want of education—to the fact that the people who drew up these by-laws were not advised by anyone except the surveyor who had not had an education as an architect and who looked at matters from a building scheme point of view only—or his own point of view, which was not the point of view of an architect or an artist, whose ideas were ignored in drawing up the by-laws. That could not be altered until the officials of corporations and other bodies were educated in some way to see the artistic standpoint. As to the formation of a Ministry of Fine Art, that was an ideal which they would all like to see taken up; if it was to be adopted, pressure in that direction would have to come from the profession. These reforms would never be initiated from inside; architects must keep on using pressure until their views were to some extent agreed to and adopted. With regard to the curriculum they had established in the Day School, he believed it to be a most excellent one, but no doubt as time went on it would be found susceptible of improvement; but as to the craze or wish to establish some sort of school of craftsmanship, he was not altogether in sympathy with that. It was a hopeless thing, and useless to endeavour to make an architect a craftsman, and it was a waste of time, for he would never become a good craftsman, and he need never know much more than the theoretical principles which govern craftsmanship in any particular trade.

Mr. Webb then put the vote of thanks to the meeting, and it was very heartily agreed to.

The President briefly replied. His great ambition was to see the Association at the end of his term of office free of debt, so that, under their then new President they might start with a clean sheet.

The President finally announced that there will be a special visit to Charing Cross Hospital on Saturday, October 15, at 2.30 p.m., by permission of the architect, Mr. Saxon Snell; and that the next meeting of the Association would take place on October 24, when Mr. E. Dockree would read a paper on "Photography as Applied to Architecture," illustrated by lantern views.

THE ARCHITECTURAL ASSOCIATION SCHOOL OF DESIGN:

OPENING MEETING OF SESSION.

THE opening meeting of the Architectural Association School of Design was held on Tuesday in the new premises of the Association, 18, Tufton-street, Westminster, S.W.

The President of the Association, Mr. E. Guy Dawber, who presided, said that they were to have the privilege of hearing that evening short addresses from Mr. Halsey Ricardo and Mr. G. H. Fellowes-Prynne. He would ask Mr. Ricardo to address the meeting first.

Mr. Ricardo said he meant to make the occasion an excuse for stringing together some well-worn platitudes, which, having stood the test of time, had almost earned a right to repetition. Like a nail in a fence, each man does a kindness who gives it a blow and helps to drive it home. In addressing a group of architectural students, it sounded a rather belated question to ask, "What do you mean by architecture?" and they would, with one accord, reply, "It is the result of building well and beautifully"; and that they had come here to be taught how to do this. The art of architecture was indeed the outcome of good building; and, as he believed, no building was ever erected that was thoroughly well built but what had a beauty proportionate to the purpose and to the sincerity of the building. He held that beauty was the bloom and consecration of honest, passionate endeavour, and that it was to be acquired that way and that way only. So that, if they were to learn about beauty, they must be taught it through the paths of construction, of morals, and enthusiasm; or rather, since it cannot really be taught, but evoked, strengthened, and developed, they must prepare themselves for this efflorescence, by discriminated knowledge. At first blush it would seem that any knowledge was all to the good, and that, as long as one was acquiring no matter what knowledge, the time was being well spent. But it was not so. One could not, to begin with, know everything, and, besides that, there was such a thing as intellectual indigestion—from which we all suffer, in varying degrees. Knowledge, to be of any good to us, was not only to be absorbed—it had to be assimilated; and the thing most generally interesting about a young man was not so much the quantity of knowledge that he possessed, but the quality of what he sheds of it. That he should be voracious and take more than he could incorporate was the sign of young, healthy, vigorous appetite, and no one could determine the capacity of his own digestion except by trial. But, for all that, as at the table food might be classed as digestible and indigestible—with intermediate degrees of either in between—so knowledge might be classed, with a view to a student's digestion, as that which could be taught and that which you teach yourself. Now it was the habit with food for the indigestible to be the most alluring—and with knowledge the parallel held good—for the most alluring subjects—such as beauty and proportion—were those they could not teach. "You may, and you must, cultivate your sense of beauty and proportion; but such education can only point out to you what has been done in past times under past conditions and attempt to explain why it has been accepted as beautiful ever since; it can't tell you what to do when your occasion comes. Each for yourselves you must build up your powers of appreciation, your faculty of discerning the spirit of a building and recognising the devotion and the passion there may be in it; each for yourselves you must evolve your own canons of beauty; and the more you know what has been done before, the more guidance you will get towards your own problem. But it is easy to dwell too long and too anxiously over the æsthetic side of your work—the man who is always considering what he may eat and what will agree with him is a valetudinarian, the strong man knows his powers and his limits, and doesn't think about them. Beauty is the unconscious bloom of thoughtful work rightfully done—beauty prepense may for the moment catch the suffrages of fashion and popular approval, but ''tis a stuff 'twill not endure,' and when its day is past it has to suffer an added scorn from those who deem themselves its cajoled votaries. But if the fair form of your profession is not to be taught, there is not the same restriction about the bones and muscles of it. These can most certainly be taught, and, moreover, they cannot be too well-known. They are to be your modes of expression. Art is the message from man to man. It matters not, so far as art is concerned, what that mode of utterance may be. The painter flames his story out on canvas; the sculptor dashes and wrings his out of the stone; the musician pours out his heart in melody and rich texture of sound; the writer in prose, the poet in verse; it is a matter of the individual, not of art, in what guise this gospel shows itself. And as a musician uses sounds, so an architect uses bricks and stones as his methods of expressing the message that is in him. And, like the composer of a symphony, he has—to give outward form to his inspiration—to depend upon the co-operation of many hands for its realisation. The composer must be so much master of his craft that he knows what each of his performances can do, and writes passages for them, that, whilst they contribute to build up the one harmonious whole, they still each may have the power and the opportunity to express their own individuality and emotion. And what is true of the orchestra is true, in a greater degree, on the scaffolding. An architect must know how to design the parts of the whole, that each workman may see the sense of them and delight in his opportunity of collaboration. But, to do this means knowing your work to the very roots of it—your construction, your materials, your men. You have to enlist their sympathies

if you want to get the best out of them, and to do this they must believe in you as one who not only knows what he wants, but knows also how one should go about to effect this. On his interest in the work he is doing for you depends the fine flower of its effect. Your walls may look alive or dead-tired—it depends on you and the way you have caused them to be raised. If they are alive and exhibiting everywhere a personal touch and the evidence of the mason's or bricklayer's fancy as well as skill, your building will be interesting, though as plain, as regards features, as a barrack; but, if your walling has been built in a mechanical, listless way, the workman content with doing his day's work, earning his day's wage and no more, careless of what his result may look like so long as it passes the standard of the foreman—that building will look dull and bored, no matter what amount of enrichment (on the same terms) you put upon it. Its weariness communicates itself to the spectator; not conscious of the reasons why, he feels that in all that oppressive mass of labour there is no story to tell, that nothing interesting has been said, that it is only one more structure added to the tedious heap that already cumbers the ground. Architecture is so sensitive—it reflects such fine shades and gleams of character, it tells you the spirit in which the edifice was raised, the temper of its occupant, of the treatment it has suffered at previous hands, and how its elements and time have been working hand in hand to co-ordinate and harmonise the ravages. Interest in architecture is not academic—it is human. A fine design bespeaks a fine human spirit, and yet, until human passion has played in and about the building, there is something wanting. Until it has been lived in and shows the marks of kindly human hands, it is imperfect. Often the hands are hardly what we can call respectful; additions are made at a later date, the symmetry is broken into and mutilated, the scale and characters of the features, doors, and windows are altered, and yet the charm of the building remains. The very fact that the innovations—so regardless of the modulus of the existing building—were frankly and sincerely made, accepting the altered conditions of life and its requirements, counts as a good mark; it forms a valuable page in the book of history; the alterations are not a sequel, they are actual human growth, and they carry with them, and all over them, the colour of the epoch in which they sprouted. But the 'beauty,' as conceived by the original designer, is gone in a parlous way, and, as for the 'proportion,' that is a lost thing. But, granting that the innovations are honestly, not wantonly, done, that the same sincerity of purpose and thoroughness of workmanship is in them as in the original building, most people will be apt to say that the world is a gainer by this disruption of the æsthetic character of the building. If the architecture of to-day is a living art it will give evidence of its life by development. Art cannot stand still, it responds to the great facts of life, and, as these are in incessant growths, so must art be continually modifying itself, to voice the feelings of the time. New methods, new facilities crowd upon us; new aims, new necessities appear with each fresh generation; and we are here to embody these in permanent garments. Our personal equipment must be intimate knowledge of our materials—so that by dint of wise application we may make them go further and do more than they as yet have done—and intimate knowledge of construction—so that we may avail ourselves of all the forces that of late have sprung up around us, and also be enabled to recognise and wrest to our purpose the capabilities of yet newer ones when they appear. It is want of this training that puts us at present in an inferior position (in the eyes of the public, and very rightly so) to the engineer; he at least has had the sense to learn all he could about bricks, steel, and concrete, and the mighty spans of his railway arches, the flights of his bridges across the rivers, the great docks and sea-walls are the real important manifestations of living architecture in the XIXth century. He has advanced the potentiality of building by force of hard sense, experiment, and mathematics. Brunelleschi built his dome at Florence, Sir Christopher Wren his dome in London on these terms, and the New Yorkers are erecting their sky-scrapers on just these terms. Neither Brunelleschi nor Wren had what we should call an architect's training; neither of them set much value on detail or cared to be bothered with it, but their constructive sense in the great problems they had to grapple carried them] securely through the smaller questions of detail; they knew enough to inspire their coadjutors to play up to them. I will only, at this time, point out to you, for your own reflection, the general statement that good detail goes with good construction, and where you detect bad detail you will discover heartless or ignorant construction. And how little excuse there is for this ignorance. The problems of construction are the fascinations of architecture as much as the problems of planning. Both are the arts of contrivance; and the art of architecture was of all the Arts (with a capital A) the last to appear amongst her sisters, since she was the outcome of so many balanced forces and so many cultivated virtues—compared to her simpler-natured sisters. We are the votaries of this goddess; in imitation of the delicately-poised equilibrium that constitutes her cognisance we rear our buildings, and in our hearts we pray that she may look down upon our efforts and irradiate them with the smile of her approval."

Mr. Fellowes-Prynne then addressed the meeting. He said he sometimes wondered how far the words that are spoken on such an occasion as this influence or help those to whom they are spoken; or whether, like many sermons that are preached, their effect ceases on leaving the door of the place in which they are spoken. Yet he would fain hope that the many words of advice—words that are often the outcome of matured experience and well-seasoned thought—that had been spoken before the Association and at the Institute year after year, had not always been cast aside by the student hearers as mere platitudes or pleasant words strung together to tickle the ears of the audience for a little while. No; he was sure this was not the case with the more serious student who had the welfare of his studies really at heart. The seed had not always been cast on waste ground. Nay, more, such delightful addresses to students as were given at the Institute by Mr. Aston Webb he was sure could be read and re-read with advantage and encouragement, not only by the younger students, but by those in later life. Indeed, with all such addresses it was often the case that the thoughts and suggestions they contained would not be fully realised or appreciated at the time they were heard, but reading after having heard them spoken was much more likely to leave an indelible impression as to the more important points. In again addressing the A.A. Class of Design, one felt like addressing old friends, for although the faces were different—and those to whom he had previously spoken were now well launched on their professional career—the enthusiasm and *esprit de corps*, he trusted, remained the same as ever, and would always continue while the A.A. exists; for was it not enthusiasm that was the very life-blood of the Association? What, in its earlier days, would the A.A. have done without the warm enthusiasm of its members? How would this very Class of Design have fared if it had not been for the enthusiastic support of those who were seeking for knowledge? "You who now have such well-served feasts of architectural education and other opportunities of study can little realise the difficulties which beset the student of thirty or even twenty-five years ago. Those were days in which one's studies were the outcome of real self-help. Yes, I'll be bound to say that no greater enthusiasm exists now than then. But the great question is, with all these advantages and opportunities, what are you going to make of them? Are we in the future, as in the past, to see our streets burdened and disfigured with such designs as your President rightly complained of in his very interesting address last week?* The result of the great and well-organised Architectural School that has arisen in our midst should, in a very few years, make itself felt, not only in Great Britain, but in every part of the Empire. Those of you who have been members of this class of design, or who have passed through the day-school, must, to some extent, realise the difficulties, as well as the capabilities and the pleasures of such a profession as ours; they must also know by this time that it is no easy-going profession that they have chosen, but one that demands, if it is to be successful in the highest sense, continuous study and hard work. But to those who have that priceless gift of enthusiasm and real love for our great Art, the study and hard work will become a real pleasure. Remember Sir Joshua Reynolds's words:—'If you have great talents, industry will improve them. If you have but moderate abilities, industry will supply their deficiencies. Nothing is denied to well-directed labour, nothing is to be obtained without it.'"

From much of the work that was done during the last session one could not but see the great improvement that was taking place under the systematic training and the able guidance of the day-school masters. Of course, the one fear in systematic and academic training was that they might be inclined to get into a somewhat narrow groove of study and be perhaps led to think that only such and such a style of work—*i.e.*, the style that may for the time be in fashion or favoured by this or that master—was correct, and all else was unworthy of study. Now, nothing to his mind could be more debasing and disastrous to the highest and noblest view of their great art; and, from the very commencement of their studies, he did most strongly advise them to be as catholic and wide in their views as possible. "Do try and look at architecture—as indeed all art—in the broadest sense possible. Avoid, as far as possible, thinking in styles. I don't mean for a moment that you should not study your orders and the gradual development of styles in all periods, and gain all the knowledge you can as to the reasons and causes of such development. This, of course, is all a part of the essential knowledge of an educated architect. But, in your study of old and new buildings, try and find out the why and wherefore of things—first in the plan, next in the effect that the plan has upon the elevations, or *vice versâ*. Ask yourself:—1st. Why you admire this or that building? 2nd. What are the leading lines or details that make it beautiful? 3rd. And, perhaps, above all, what is it that makes the proportions good? 4th. How does the detail at different stages and heights affect that proportion? These and similar questions are those the answering of which, wholly independent of style, will help more than any other in the intellectual study of any good building. When once you have satisfied your own mind as to the reasons that go to make up a thing of beauty, if possible, note them down at once in your sketch-book, and, as far as you can, measure and figure the details that seem to help most in giving beauty and proportion to the design you admire. This kind of analytical study you will find of immense use in design. The notes in your sketch-book may not be very pictorial or interesting to others, but will gradually form a regular storehouse of information to yourself. And, while speaking of sketching, let me advise you to always have a small sketch-book with you for making notes and small sketches in: I don't mean only when you go out intending to sketch, but always—on your walks, your bicycle rides, in fact in your every-day work—for, if you keep your eyes open, it is wonderful what one sees that is worth recording, either by notes or sketches. There are some things and sayings that stick to one's mind throughout life, and the advice of the first architect I worked with was, 'Whatever you do, don't go through the world with your eyes shut, as more than half the people in the world do.'"

There was another point on which he should like to say a few words, and that was the practical side of their work. The fascination of sketching, and thinking, and setting out schemes of design on a drawing-board was great; but, as a preliminary part of their education, it was equally, if not more, important that they should thoroughly grasp the practical side of their work. Now, he was sorry to say so, but over and over again he had found men and pupils who fought shy of often visiting the actual works while in progress. As one said to him a short time ago, "I don't care for mixing up with a lot of workmen." And another, "I don't see the good of watching a whole lot of concrete put in."

"My dear young friends, for goodness' sake don't let such nonsense enter your heads, or, if there is one here who thinks thus and adheres to such thoughts, let him give up the profession; he evidently doesn't think it worthy of him, and he is certainly not worthy of the profession. Some practical experience is essential, and the sooner you get it, the better for yourselves and your future work and clients. Put off your kid gloves—aye, and your coat if necessary—and take every opportunity of

* Printed on another page.

getting on any works you can while in progress; watch each stage of the work carefully and intelligently; get on friendly terms with the foreman and the men, and don't be ashamed to ask for information. The men like to have interest taken in their work, and you will gain invaluable information by carefully watching the work on bench or banker. Most of the men I have come across will be only too glad to tell you all you want to know. Personally, I believe that it would do most of us all the good in the world to be put under the care of a good clerk of works on a large job for a year. It would knock some of the pride and nonsense out of us, and make us realise that architecture does not consist solely in making pretty drawings of sometimes impossible buildings. I have nearly always found the greatest kindness and civility from workmen in all trades, and I sometimes feel I ought to pay a premium for the amount of practical knowledge they have given me on various occasions. There are lessons to be learnt on a building in progress that no amount of book-work or diagrams will teach you. Again, the enormous advantage in practical experience to an architect is at once seen in his drawings and designs. It is this want of practical knowledge that so often makes the progress of otherwise capable pupils and draughtsmen so disappointing. To give you one personal example of how I have found some experience in carpentry useful:—The opening of a certain church was to take place on the following day, and the first service was at eight o'clock in the morning. Things were much behind, and, when I arrived, I found that some unpleasantness had arisen with the joiners, who had been drinking with the foreman, and they lounged about, refusing to work after six o'clock. I tried to persuade, but only obtained the help of one good man. It was of the utmost importance that some of the east-end woodwork should be properly fitted in position. At seven o'clock I took off my coat and, to the astonishment of the men present, set to work with borrowed tools. The moral effect was excellent. At nine o'clock some of the better men came back to work, and by two o'clock in the morning I had the satisfaction of seeing the work completed. I can assure you the much-abused British workman respects the man who not only orders the work to be done, but can tell him how to do it.

"Now, in conclusion, having treated with the practical side, let us for a moment look on another and, perhaps, more pleasurable side of our art. There is that happy social side which has made its mark on the lives and work of so many members of the A.A. in past years. Do all you can to keep up that social aspect of the work. Encourage, as far as possible, that friendly intercourse with your fellow-students—friendly criticism of each other's designs will be of the greatest possible value, and friendships made now, and kept up and cemented in after-life, will in future years be cherished as an added pleasure to your professional work. Last, but not least, throughout your work let your aims be high. Think of the greatness of the art which you have chosen for your profession. An art that is at once noble and ennobling to those who view it rightly. It is an art that more than any other marks the character and history of nations. Surely, the advancement of such an art is worth living and working for. Let my last words be those of George Herbert:—

> 'Pitch thy behaviour low, thy projects high;
> So shall thou humble and magnanimous be.
> Sink not in spirit; who aimeth at the sky
> Shoots higher much than he who means a tree.'"

The President said they had had two delightful addresses, and there was much in them that one would be glad to read when they were printed. In Mr. Ricardo's beautifully-expressed paper one thing was emphasised, and that was that there could be no good architecture without a sound, practical knowledge, and he (the speaker) hoped they would, as students, impress that on their minds. They might be walking in the country where they might see an old wayside cottage which was built of brick or stone, which would impress them far more, perhaps, than the modern, garish villa next door covered with ornament. They might ask themselves why that was. He thought the reason was that the people who built the old cottage understood the capabilities of the materials they were using, and he should like students to remember that without practical knowledge it was impossible to make a good building. As Mr. Prynne had said, they should use every opportunity of getting on to buildings in progress, and into shops, in order to learn everyday practical things. For instance, if they visited a stone quarry, they should go right down inside it, and see how the stone was got out, how it was worked, the tools used, how it was cut, and whether it was fine or coarse grained—before they could properly design in that material, and so with others. As Mr. Prynne said, if they could get on a good building with a clerk of works, and accustom themselves to seeing the work through from beginning to end, it would be of inestimable advantage to them. They could never design until they knew how a building was put together and constructed. Good construction helped good design. Then as to what Mr. Ricardo said about mouldings and details, he (the speaker) thought with him that students would do well to leave such trivialities alone—they were the mere trimmings of a building—and study mass and dignity in design. The design without detail would speak for itself, and would be good or bad architecture without detail. It was very good of Messrs. Ricardo and Prynne to have come among them that evening, and he was glad to see such a good audience.

On the motion of the Chairman a very hearty vote of thanks was then accorded to Messrs. Halsey Ricardo, and Fellowes-Prynne for their remarks.

Mr. H. Tanner, jun., announced that there were two classes the Association would be glad if some students could find time to attend, *i.e.*, classes in ornamental leadwork and stonework at the L.C.C. Technical Institute in Vincent-square, Westminster. They were poorly attended, and the L.C.C. thought of discontinuing them unless about fifteen or eighteen students could be found to attend them. It would be a great pity to let such useful classes drop.

The meeting then terminated.

UNIVERSITY EXTENSION GUILD.

The annual reunion of the University Extension Guild was held at the University of London, South Kensington, on Tuesday evening, under the chairmanship of Sir Arthur Rücker, F.R.S. (Principal of the University), when addresses were given by Dr. Emil Reich and Mr. Hillaire Belloc, B.A., descriptive of their lectures to be delivered in the Michaelmas term.

The Chairman, in opening the meeting, congratulated those who had worked so hard for the Guild on the success which had attended their efforts. It was an answer to those who doubted at the commencement that they could get such an attendance at a course of lectures which were not merely ordinary popular lectures, but were a system of lectures extending over three years. This was the second year's lectures of the three years' course. Last year the history of antiquity was dealt with; this year they were to hear a great deal of the time between the decline of the Roman Empire and the Reformation, and next year the subject of more modern history would be dealt with. It would be thus possible for those who could attend to hear a continuous course of history extending over almost the whole range of time known to man.

Mediæval History.

Dr. Emil Reich delivered an address introductory to his course of lectures on "Mediæval History," and said that he intended to give an account of the Carlovingian Empire, the Byzantine Empire, and of the great Popes of the Middle Ages; of the foundation of the great orders and the Crusades, and to devote three lectures to mediæval thought or scholastics, mediæval art, Gothic architecture, and mediæval life, both home and public. The Middle Ages, he held, had been suffering from a variety of causes, misleading public judgment. In the first place the public generally identified the Middle Ages with everything dark, unprogressive and benighted. The average man thought that they were full of tortures, witch trials, religious persecutions and the like, but as a matter of fact all these evils were infinitely more frequent in the XVIth and XVIIth century than in the Middle Ages. They owed an enormous debt to the Middle Ages, which gave them a most magnificent specimen of a novel art—Gothic architecture. In the XVIIIth century they laughed at Gothic architecture, and called it crude and rude, but they had long learned to think differently, and no modern man could see the exquisite mediæval churches without thanking the Middle Ages for that art. It might be said these people had no literature and no science, but their souls went into these beautiful buildings.

Mr. Hillaire Belloc, who will deliver four lectures during the term on "The History of a Mediæval Town," said his was but one aspect of the subject which Dr. Reich had placed before them, but it was a subject which had attracted him from his boyhood, and he would try to show why it still continued to attract him. A matter which would soon be debated was whether certain physical things or great philosophies had had more effect on the history of civilisation, but when it was debated no conclusion would be arrived at because they could not compare the two things. When that debate was entered into people would rush in and say that religion was more important than race, although for many years they had held that race was more important than anything else. But if race had any effect, and they all knew it had, then the Middle Ages were ourselves, and that was their interest. When a man said that Greece or Rome was nearer to him than the Middle Ages—he meant a man who knew the Middle Ages—then he would say, "You are saying something up in the air." Give such a man a slave and he would not know what to do with him, but a Greek or a Roman would know where to sell him and how to treat him. In the Middle Ages there were capitulations and prisoners of war, but there was no slavery—the men of the Middle Ages were ourselves. When the Roman Empire fell the barbarians did not come to destroy, and the great theatre of Paris remained for 130 years. If they took city after city they would find that there was no great change after the first invasion. Things gradually declined. Then came the invasion of the Saracens, but Western Europe averted that with difficulty. At the beginning of the Xth century Europe was like a man who had gone through some terrible physical experience and had almost lost his memory, and whose wonder was how he had survived. At the end of the XIth century, by a process no one could understand, but which was more wonderful than the Renaissance, there came an awakening of Europe. There came Gregory VII., the Crusades, and that extraordinary phenomena the Normans. Just as they made steel by adding a small percentage of carbon to iron, so a small percentage of Scandinavian blood added to the blood of the Roman produced the Norman. Like all things eccentric, it could not last—he doubted if it lasted 130 years, but while it was there it organised and schooled Europe. It actually made a land measurement, and the Normans put into the air vague instincts out of which came a true feudal system. It was the awakening of Europe. There appeared with the beginning of the XIIth century an ideal which lasted 300 years, and that ideal was made by men like ourselves. There had been no change in our race; there had been no influx into our blood since then; there had not been even an admixture in our blood since then. We were the same people; we were ourselves in the Middle Ages. Our architecture was not copied from elsewhere, and our social system was organised on lines which the race evolved and copied from nowhere. And then came the great tragedy of history. He was sorry that Greek art declined; he was heartbroken to hear that the Stoics at last became Mystics; but much more sad was he to read how this great dream of the XIIIth century went down. Some attributed it to the black death, and others to the Catholic Church, but they might discuss it again and again and still be no nearer the truth. It was true he was supposed during the term to tell them why it fell, but in truth he did not know, and he would only be able to sketch out the approximate causes of its failure. He could only tell them that terrible failure came, but not why it came. But, with regard to that delightful time, they had not only the documents and the architecture, but many stories which illustrated the life of that period. And so in dealing with this period he continually felt as if he was living in it. In that time in Western Europe there were two principal forms of social units—the manor or village and the town. In the course of the lectures he was to deliver he was going to show how the mediæval town arose from Rome, and should try to describe

its interior organisation and how it became the centre of great activity. He should deal with such towns as London, Paris, Rheims, Salisbury, Chester, and others, as examples, and then he would come in the last lecture to discuss why the ideal fell, but that could not be answered.

THE THAMES AND RIVER-SIDE HOUSES.

FROM A CORRESPONDENT.

THE August number of the *Strand Magazine* contains the answers of many great artists to the question, "What is the finest view in the Kingdom?"

One replies that his favourite view used to be "that of the Thames at Streatley, now ruined by the modern buildings there." Now, why should that be so unfortunately true? No one would assert that a building—even a large building—*need* spoil a landscape. Windsor Castle, for example, is the chief charm of the view from the river near it. To take the other extreme, a rustic cottage is the artist's delight. Why should that which lies between these two, the gentleman's villa, be so often a blot on the landscape? Is it not because suitability to the place has not been considered? A dweller in Kensington or Fitzjohn's Avenue wishes for a country house in some nook which has captivated him by its tranquil beauty, and he orders it in the style of his town house, so spoiling the very charm that has attracted him.

Wordsworth, who gave so much thought as well as time to laying out Lady Beaumont's grounds for her, says that the fundamental principle is that "the house should belong to the country, and not the country be an appendage to the house."

It would be a real public benefit if those who are going to build Thames-side houses would place them on the further side of their land, from the river, and this in most cases would be an improvement to the house. Not only will the slightly higher ground be drier, but also the view of a stream between its banks is generally more attractive than a view which contains little but the opposite bank, with a floor of water.

This suitability, which is an essential part of beauty, should extend of course to the grounds as well as the house. In towns, where a garden is surrounded with buildings, many people admire geometrical beds with blooms that imitate mosaic, but a glance shows how little they fit in to a country landscape. Long, tranquil lines that seem to flow into the stream—does not Nature suggest them by her stately reeds and bamboo-like grasses? Yet many riparian gardeners, instead of cultivating this luxuriant growth, use the sickle and mowing-machine to destroy it, and then place painted tubs in a row on the bare, hard edge. If they would view their riverside gardens from a boat, at a little distance, and consider them as part of a landscape, they would soon decide that a different treatment was wanted.

THE LONDON COUNTY COUNCIL.

THE first meeting of the London County Council after the summer recess was held on Tuesday in the County Hall, Spring-gardens, S.W., Mr. J. Williams Benn, M.P., presiding.

Loans.—On the recommendation of the Finance Committee, it was agreed to lend Battersea Borough Council 1,054*l.* and 1,581*l.* for the purchase of land; Bermondsey Borough Council, 10,000*l.* for the erection of working-class dwellings; Camberwell Borough Council, 14,500*l.* for the purchase of leasehold interests in depôts; Poplar Borough Council, 1,472*l.* for purchase of dust-vans; St. Marylebone Guardians, 4,000*l.* for drainage works at the infirmary; Shoreditch Board of Guardians, 1,090*l.* for water-supply purposes at the workhouse; Southwark Borough Council, 14,000*l.* for purchase of Greenmore Wharf, Bankside, for use as a depôt; Woolwich Borough Council, 4,800*l.* for contribution towards the cost of acquiring Eltham Park. Sanction was also given to the borrowing by Hackney Borough Council of 5,339*l.* for paving works; and to Paddington Borough Council, of 2,587*l.* for paving works.

Improvements: Central-street.—The following recommendation of the Improvements Committee was agreed to:—

"That the estimate of 5,875*l.*, submitted by the Finance Committee, be approved; that to enable the Council to complete satisfactorily the widening of Central-street now being undertaken under the powers conferred by the London County Council (General Powers) Act, 1901, and in accordance with the application of the Council of the Metropolitan Borough of Finsbury, a contribution be made on the usual conditions of half the net cost of the widening of existing and the formation of new streets on the eastern side of Central-street, proposed to be carried out by the Borough Council by arrangement with the Ironmongers' Company, in accordance with the plan presented to the Improvements Committee on July 13, 1904; provided, however, (*a*) that if the total net cost exceed 11,750*l.*, the Council's contribution shall be limited to 5,875*l.*; (*b*) that in the carrying out of the improvement no departure whatever be made from the approved plan, except with the previous sanction of the Council; and (*c*) that the Ironmongers' Company agree to provide other land for the purposes of the L.C.C. school in place of that taken for the improvement, and to bear the cost of the necessary re-arrangement of the boundary walls, out-buildings, etc., and also carry out the proposed arrangement with the Borough Council for the sale of land for the provision thereon of re-housing accommodation for the persons of the labouring class to be displaced by the execution of the company's scheme."

Health Asylum, Bexley.—The following recommendation of the Asylums Committee was agreed to:—

"That, subject to the approval of the necessary plans by the Home Secretary, the estimate (No. 4,248) of 16,250*l.* submitted by the Finance Committee, for the erection and equipment of a hospital villa on the male side of the Heath Asylum, Bexley, be approved; and that the expenditure for the purpose of a sum not exceeding that amount be sanctioned."

Tramway Works.—On the recommendation of the Highways Committee it was agreed:—

"That the estimate of 1,000*l.* submitted by the Finance Committee, be approved; and that expenditure, on capital account, not exceeding that amount, be authorised in connexion with the purchase by the Council of the freehold interest in a portion of the Queen's-road, Battersea, tramways depôt, for the erection thereon of a sub-station for the electrical working of a portion of the London County Council Tramways.

"That the freehold interests of the trustees of the Stockwell Orphanage in the proportion of the Council's tramways depôt in Queen's-road, Battersea, referred to in the foregoing resolution, be acquired for the sum of 825*l.*

"That Messrs. H. Lovatt, Limited, be allowed to sub-let to Messrs. Beaven and Sons, London (or to such other firm as may be approved by the architect), the work of plumbing, painting, and glazing included in several contracts being carried out by Messrs. Lovatt for the Council, in connexion with the Greenwich electricity generating station and sub-station.

"That the seal of the Council be affixed to any necessary documents in connexion with the acquisition by the Council of the freehold and leasehold interests in the property known as No. 32, Rivington-street, Old-street, which has been acquired as a site for the erection of a sub-station for the electrical working of portions of the Council's (Northern) Tramways."

Housing.—The Housing of the Working-classes Committee submitted the following statement of new dwellings completed during the summer recess, and opened for occupation:—

Name of Estate and Buildings.	Number of Tenements of				Number of persons provided for.
	One Room.	Two Rooms.	Three Rooms.	Four Rooms.	
Hughes-fields, Deptford—					
Drake-buildings	—	10	30	—	220
Ropemaker's-fields, Wapping—					
Brightlingsea-buildings	5	20	35	5	340
Preston's-road, Poplar—					
Hudson-buildings	—	20	5	—	110
Quebec-buildings	—	25	25	—	250
Winnipeg-buildings	—	25	55	—	250
Leroy-street, Bermondsey—					
Barnaby-buildings (part)	—	10	10	—	100
Total	5	110	130	5	1,270

Drake-buildings have been erected on a plot of surplus land acquired under the Hughes-fields scheme, 1885, and are intended to provide accommodation for re-housing 214 persons of the working-class to be displaced by the erection of an electricity generating-station at Greenwich in connexion with the Council's tramways. Brightlingsea-buildings have been built in part satisfaction of the obligation resting upon the Council for re-housing the persons to be displaced on the north side of the river Thames by the construction of Rotherhithe tunnel. The erection of Hudson, Quebec, and Winnipeg-buildings completes the provision of the accommodation required on the Preston's-road and Norfolk-street sites for persons to be displaced by the clearance of the areas included in the Burford's-court, etc., improvement scheme, 1899, and, also, by arrangement with the late School Board for London, for satisfying the obligation which rested upon that authority for providing accommodation in lieu of that destroyed by it in various parts of the county over a number of years. Barnaby-buildings are provided for the purpose of re-housing persons to be displaced by the carrying out of the Long-lane and Tabard-street improvement.

Boswell's London House.—Upon the recommendation of the Local Government, Records and Museums Committee, it was agreed that a memorial tablet should be affixed at No. 56, Great Queen-street, to commemorate the residence there of James Boswell.

Theatres, etc.—The Theatres and Music Halls Committee reported that plans for the following, showing alterations, etc., to licensed premises, had been dealt with during the recess:—

Bechstein Hall, Wigmore-street—Showing the provision of a private room for the box-office keeper.
National Skating Palace, Argyll-street—Proposal to meet one of the Council's suggestions for the improvement of the premises.
All Saints' Institute, Priory-road, Lambeth—Showing seating arrangements.
Daly's Theatre—Proposals to meet certain requirements of the Council.
Excelsior Baths, Bethnal Green—Showing alterations to the seating and flooring.
Inns of Court Mission, Drury-lane—Proposal to substitute fire-proof plaster doors for the existing iron doors.
Lecture Hall, Greenwich—Provision of ante-room.
London Exhibitions, Earl's-court—Formation of a cinematograph enclosure in the Panorama-buildings, Western-gardens.
Lyric Theatre—Re-arrangement of pit seating.
Royal Court Theatre—Provision of a new transformer chamber.
Bermondsey Town Hall—Bazaar from November 1 to 5, 1904.

Plans relating to certain work at the following buildings were, on the recommendation of the same Committee, passed on conditions:—

Clarendon Hotel, Hammersmith-broadway.
Forest Hill Baths.
Fullers, Limited, Nos. 207 and 209, Regent-street.
Headquarters of the South Middlesex Volunteer Rifles, Fulham.
King's Assembly-rooms, Cottage-grove, Bow-road.
La Criadera, Nos. 29 and 30, High Holborn.
London Coliseum.
London Exhibitions.
Long's Hotel, New Bond-street.
Prince's Restaurant, Piccadilly.
Sportsbank Hall, Catford.
"Ye Plough," Clapham Junction.

Motor Omnibuses.—Mr. Baker, in reply to several questions, said that the working of motor-omnibuses as tried in several provincial towns, did not lead him to believe that if they were introduced in the London streets they would form any formidable rival to the Council's electric tramways. In the event, however, of such motor omnibuses being put on the Council's based tramway routes, steps would be taken to see whether motors could not be used on the horse-trams so as to compete with the opposition.

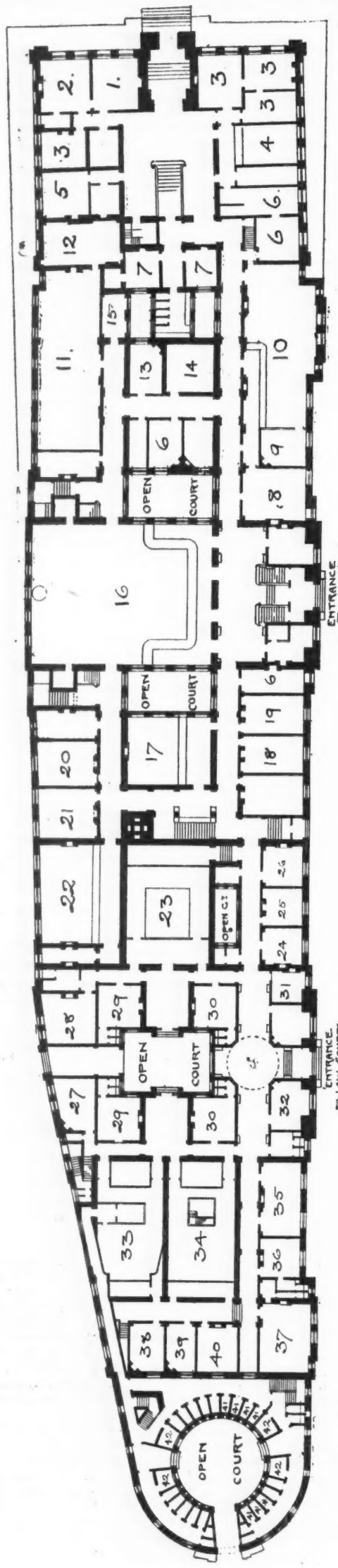
Traction Engines.—On the report of the Public Control Committee, Mr. Beachcroft asked the Chairman when the conference on the subject of the use of traction engines in London thoroughfares was likely to be held.

Mr. Harben replied that the conference had been fixed for Friday, November 18.

Mr. Beachcroft asked whether in that case, assuming that the conference came to the conclusion that legislation was required, it would not be too late to initiate any action in the coming Parliamentary session.

Mr. Harben: Undoubtedly it will be too late for this session, but it will be quite impracticable to call the conference at an earlier date.

Inspection of Theatres.—On the motion of Mr. Dolman, the Theatres and Music Halls Committee were instructed to present a half-yearly return as to the inspection of places of entertainment by the Council's officers, showing the number and nature of the offences reported.


EXISTING TOWN HALL
ENTRANCE TO PUBLIC HALL
ENTRANCE TO LAW COURTS
OPEN COURT
OPEN COURT
OPEN COURT

other fittings dealt in by the Company, general stores, and a kitchen department for the supply of meals to the clerks; on the ground floor, the general public office, entrance hall, rooms for the principal officials, and a large showroom for the display of appliances for heating, cooking, and lighting by gas, the sale and letting out on hire of which now forms a large part of the business of most gas companies; on the first floor, the board room, directors' room, the engineers' department, auditors' and collectors' rooms, and clerks' luncheon and smoking-rooms; on the upper floor are placed a room for teaching cookery by gas, the caretakers' apartments, and workshops for the repair and testing of meters and gas stoves.

The lifts throughout the building will be hydraulic, worked by an accumulator automatically controlled by a gas engine, which will also be used to illustrate the production of electric current by the use of gas.

The main frontages will be faced with Bath stone, the ground floor balustrade and other parts on that level liable to damage being of granite. The roof will be covered with thick green slates.

A clock turret will be constructed with illuminated faces, to rise above the roofs in the centre of the main façade.

The entrance hall and staircase, the general office and board room, will be the only parts of the interior treated ornamentally.

The whole will have coffered plaster ceilings. The floors of the two former will be laid with mosaic, and marble will be used for the dadoes and shafts of archways. The joinery to the board room, general office, and secretary's room will be of teak and the floors of oak. The whole of the floors throughout the building will be fireproof.

The general contractor is Mr. C. A. Hayes, and the architect Mr. W. V. Gough, both of Bristol.

PHOTOGRAPHS FROM CANTERBURY TOWER.

By the kindness of Mr. Caröe, the architect in charge of the repairs to the centre tower of Canterbury Cathedral, we are enabled to give some illustrations of portions of the tower, from photographs recently taken, which show the present state of some of the work.

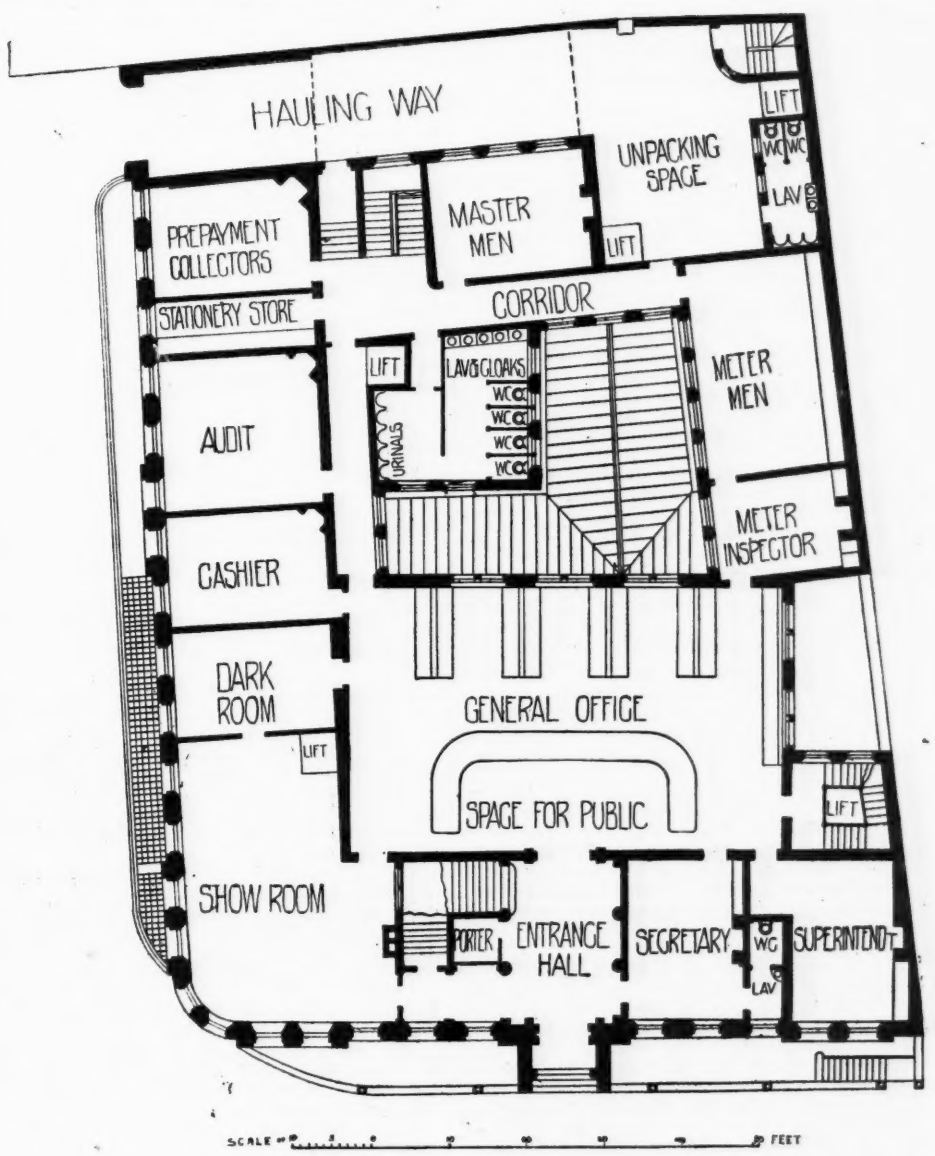
Nos. 1, 3, and 8 show the condition of some of the mullions in the tower windows; Nos. 5 and 6 the extent to which some of the buttresses are worn away. No. 2, which shows one of the turret tops in which the gables (as mentioned last week) are capped at the apex by iron bars, is on too small a scale, unfortunately, to show all that it was intended to show; the stone work, as Mr. Caröe informs us, is put together here much more like joinery than stone-work. No. 7 is a view taken looking upward through the scaffolding up one of the angles of the tower. This illustrates one of the portions that is in best preservation.

LUNATIC ASYLUMS.

The Commissioners in Lunacy, in their fifty-eighth report to the Lord Chancellor for the year 1903, devote many pages to an explanation of their views on the subject of large asylums and of their objections to the use of temporary buildings. Subjoined are the chief facts and arguments adduced:—

"We are unable to view without grave concern the modern tendency to undue increase in the size of asylums for the insane poor, and we think that the time has arrived when we should renew our protest against it. Its advocates justify it principally on the ground of convenience and economy, and if this were proved, and there were no weighty counterbalancing evils, we should have no adequate grounds for the expression of adverse views. This is however, in our opinion, far from being the case. We have never failed to recognise the serious financial burden which the continually increasing accumulation of the insane poor is imposing upon the community, or to sympathise with every legitimate and practicable effort to lessen its onerous character. As we have pointed out in previous reports, we think that this might be done to an appreciable extent by the building of asylums of simpler forms of construction, in which the aged and harmless class of patients who are now removed in increasing numbers from their homes and from the wards of workhouses into asylums which have been built and are fitted for acute cases, might be accommodated and maintained at a somewhat cheaper rate. While such asylums as we have indicated could never be made absolutely cheap, for the helpless and sick predominate and would need all the appliances for suitable nursing, we think that they could be built and furnished less expensively than at present and be conducted at a lower rate. The mixed asylums, as now built and organised, provide for all patients, in whatever mental and physical condition they may be, practically the same kind of accommodation and treatment, which for some is necessary but for others superfluous. As long, however, as these asylums remain of moderate size they accomplish their objects, if in a somewhat expensive at least in an efficient manner; and the medical superintendent of each, who has presumably and generally been selected by the committee for his skill and experience in the treatment of mental disease, is able to apply those qualities to the treatment of all his patients and to be in close medical relationship to them. The moment that his asylum increases beyond a reasonable size this ceases to be possible. He loses touch with his patients, and has to delegate his medical functions to others who are, if not less able, usually less experienced than himself. When an asylum contains 2,000 to 2,500 patients, as some of them now do, this delegation must necessarily apply to the great bulk of the patients, and the special qualifications of the medical superintendent become of comparatively small value in the matter of medical treatment. The aggregation of large numbers of persons, moreover, within buildings upon a limited area gives rise to the origination or development of diseases of a serious and fatal type, such as that which has come to be known as *asylum dysentery*. The evils of undue aggregation in consumption have already been widely recognised by the public, who have long since realised the extreme difficulty, if not impossibility, of maintaining in health even animals of the lower species which are kept in confinement under such conditions. As the population of asylums assumes proportions beyond certain limits their administration becomes increasingly difficult. It certainly does not conduce to greater efficiency, and it obviously cannot, therefore, be supported on the ground of economy. Of the sixty-two county asylums the weekly cost per head in maintenance in 1902 was, in thirty-six, which contained less than 1,000 patients each, 9s. 8¾d., whereas in twenty-six, each of them containing from 1,000 to 2,672 patients, the average weekly cost per head was 10s. 3½d., showing an excess of 6½d. per head per week. As has been well pointed out elsewhere, there would seem to be an unit of economical supervision and management which cannot be overpassed without waste and loss of efficiency. In the case of the Rowton Houses, this is said to have been found to be about 800 beds. For these and other reasons of a similar nature we regard the present tendency unduly to enlarge county asylums as distinctively retrogressive and opposed to the best interests both of the insane poor and of the public, upon whom falls the burden of their maintenance."

Temporary Buildings.—The Commissioners go on to state that immediately after the occurrence of the deplorable and disastrous fire at Colney Hatch Asylum in the early part of 1903, resulting in the death of fifty-one patients and the entire destruction of the temporary buildings in which those patients were then lodged, they (the Commissioners) made a careful investigation with respect to the temporary buildings which had been erected at other asylums. They possessed themselves of full particulars upon all points which concerned their liability to danger from fire, and took such further steps as were within their power to limit that danger as far as possible and to insure the escape of the inmates in case of necessity. They made certain recommendations, and in some cases the course subsequently adopted in several of the institutions concerned had received their approval, but in others their strongly expressed opinions had been entirely disregarded. At Banstead Asylum the temporary buildings, first sanctioned in 1895, are still, the Commissioners regret to report, in use, and in their opinion continue to menace the safety of not only the inmates of the temporary annexe but also the main building itself. It is the very strong opinion of the Commissioners that these buildings ought to be disused at the earliest possible moment, as they are constructed of highly-inflammable materials very similar to those with which the late temporary annexe at Colney Hatch Asylum was built. Pending the abolition of the temporary buildings the Home Secretary has approved certain alterations recommended by the Commissioners with a



New Offices for the Bristol Gas Company. Plan.

view to minimising the danger in case of an outbreak of fire. These alterations, which, in the judgment of the Commissioners, cannot safely be regarded as more than a temporary expedient, are as follows:—

"1. The blocks of single rooms and the sides of connecting corridors have been removed.

"2. The subways beneath the corridors have been partitioned by cross walls.

"3. Concrete flooring has been laid at the entrance of the wards and also between the day-rooms and dormitories.

"4. The work of staining and dry-rubbing the floors has been discontinued; and

"5. Additional exits, opening outwards from all the rooms, have been provided."

With regard to the decision to erect at Banstead Asylum a new permanent block in lieu of the existing temporary buildings, the Commissioners express their strong objection to the course proposed on the ground that, as at Colney Hatch, there are special reasons militating against the proposals, inasmuch as both asylums are built upon estates too small to justify the enlargement of their buildings, the estate at Banstead being less than half the size which is regarded by the Commissioners as necessary for the purposes of an asylum in respect to the matters of exercise, recreation, useful occupation, and some forms of food supply.

The Commissioners also review at some length the proceedings in connexion with temporary buildings at the Denbigh, Durham, Essex, Glamorgan, Monmouth, Northumberland, Notts, Rainhill, and Brighton Asylums.

APPLICATIONS UNDER THE LONDON BUILDING ACT, 1894.

THE London County Council at their meeting on Tuesday dealt with the following applications under the London Building Act, 1894. The names of applicants are given between parentheses:—

Clapham.†—One-story shops in front of Nos. 20 to 48 (even numbers) inclusive, Battersea-rise, Battersea (Mr. W. N. Dunn for Mr. W. Williams).—Consent.

Kensington, South.†—Buildings on a site on the south side of Kensington-road, Kensington, to abut also upon Palace-gate (Messrs. Millard and Pryce for the Royal Exchange Assurance Company).—Consent.

Strand.†—A projecting clock in front of Nos. 27 and 28, Haymarket (Mr. F. T. Verity for the Civil Service Co-operative Society, Ltd.).—Consent.

Hackney, North.—Retention at No. 43, Eastbank, Stamford-hill, Hackney, of an oak and tile porch at the front entrance, and of an oak and tile pent over the side entrance abutting upon Dunsmure-road (Mr. W. J. Ellis for Mr. T. Saxton).—Consent.

Hampstead.†—Verandahs at Nos. 10, 12, 14, and 16, Crediton-road, Hampstead (Messrs. Boehmer and Gibbs for Mr. E. Walker).—Consent.

Holborn.—A projecting clock at No. 125, High Holborn (Messrs. Jones and Hamp for the Waltham Watch Company).—Consent.

Kensington, North.—An iron and glass shelter in front of No. 20, Pembridge-square, Kensington (Messrs. Towers, Ellis, and Co. for Mr. K. H. James).—Consent.

Kensington, South.—An additional story on the addition at the side of No. 42, Onslow-square, Kensington, abutting on Sumner-terrace (Mr. E. H. Payne for Mrs. G. Hargreaves).—Consent.

St. George, Hanover-square.—A projecting sign in front of No. 157, New Bond-street, St. George, Hanover-square (Mr. I. C. Goodison for Messrs. Speaight, Ltd.).—Consent.

Chelsea.—Retention of a gas-meter house at the Ashburnham school, Lots-road, Chelsea (Mr. T. J. Bailey for the Education Committee of the Council).—Consent.

Clapham.—The completion of four houses, with porches and bay windows, on a site abutting upon the east side of St. James'-road and south side of Balham-park-road, Wandsworth-common (Messrs. White and Co.).—Consent.

Hammersmith.—Bay windows to twenty-two semi-detached houses in Flanchford-road, Hammersmith (Mr. A. Dawkins for Mr. W. G. Chapman).—Consent.

Hammersmith.—Re-erection of the "Wellington" public-house on the site of Nos. 102, 104, and 106, Uxbridge-road, Hammersmith (Mr. J. H. Richardson for Messrs. Watney, Combe, Reid, and Co.).—Consent.

Hampstead.—A bay window and porch to "Wayneflete," Eton-avenue, Hampstead (Mr. A. F. Faulkner for Mr. Willett).—Consent.

Hampstead.—A wooden porch in front of No. 30, Belsize-avenue, Hampstead (Messrs. M H. Judge and Sons for Mr. F. Weintraud).—Consent.

Kennington.—One-story shops at No. 355, Wandsworth-road, Kennington (Mr. H. Bignold for Mr. O. Camburn).—Consent.

Kensington, South.—Buildings on the south side of Holland-street, Kensington (Messrs. Chesterton and Sons for Messrs. C. A. Daw and Son).—Consent.

Lewisham.—Twelve houses with bay windows on the northern side of Rutland-road, Perry-hill, Catford (Mr. W. C. Poole for Mr. J. Johnson).—Consent.

Lewisham.—That the application of Messrs. W. D. Church and Son on behalf of the Rev. F. A. Trick for an extension of the periods within which the erection of a porch in front of a proposed church on the south-eastern side of Torridon-road, Lewisham, was required to be commenced and completed be granted.—Consent.

Paddington, South.—A porch and balustrade in front of No 36, Gloucester-gardens, Bishops-road, Paddington (Messrs. M. H. Judge and Sons for Mr. A. Dowie).—Consent.

Peckham.—Buildings on the site of Nos. 295 and 297, Commercial-road, Peckham (Mr. A. Budds for Mr. A. L. Horlock).—Consent.

Wandsworth.—The erection of sixteen houses with bay windows on the southern side of Mayford-road, Wandsworth-common, eastward of Ravenslea-road (Mr. W. C. Poole for Mr. W. E. Kerven).—Consent.

Lewisham.†—One-story shops in front of Nos. 120 and 122, Sydenham-road, Lewisham (Mr. H. E. Davey for Mr. W. Cooper).—Refused.

Paddington, South.—A building upon the site of Nos. 127 and 129, Edgware-road, Paddington, to abut also upon Burwood-place (Messrs. Bourchier, Burmester, and Galsworthy for the London and Provincial Bank, Ltd.).—Refused.

Strand.—That the Council do not accede to the request of Messrs. Wilkinson, Howlett, and Wilkinson on behalf of Mr. F. Curzon for permission to retain a projecting wood and canvas sign in front of the Strand Theatre, Strand.—Refused.

Hackney, South.—The retention of a wood, glass, and iron porch at the Workhouse, Sidney-road, Homerton (Mr. F. R. Coles for the Guardians of the Hackney Union).—Refused.

Hammersmith.—The retention of a sign-board in front of Nos. 36 and 38, Uxbridge-road, Hammersmith (Mr. A. Sykes for Messrs. Lilley and Skinner).—Refused.

Kensington, South.—A conservatory building on the south side of Cromwell-road, Kensington, westward of Collingham-road (Mr. J. D. Hunter for Mr. J. Russell).—Refused.

Kensington, South.—Stone entrance steps and a glazed canopy at No. 81, Holland-park, Kensington, to abut upon Holland-park-avenue (Messrs. Rawlings Brothers, Ltd., for Mr. R. Bradford).—Refused.

Norwood.—Houses with shops on the west side of Brixton-hill between Acre-lane and Hayter-road, Norwood (Messrs. Gush, Phillips, Walters, and Williams for Mr. R. A. Johnston and Miss C. S. T. Johnston).—Refused.

Wandsworth.—A dwelling-house, No. 10, Mount Ephraim-road, to abut upon Blakemore-road, Wandsworth (Mr. W. N. Dunn).—Refused.

Westminster.—A one-story shop in front of No. 276, Vauxhall-bridge-road (Mr. H. Branch for Mr. R. W. Essex).—Refused.

Width of Way.

Hackney, Central.†—The retention of a one-story building on the west side of Roseberry-place, Dalston (Mr. E. C. Trench for the North London Railway Company).—Consent.

Finsbury, East.—A building on a site abutting on Great Arthur-street and Little Arthur-street, Finsbury (Mr. J. Groom for Mr. C. Clifford).—Consent.

Battersea.†—A building on the south side of Cabul-road, Battersea (Mr. E. Cannell for Mr. F. Priddis).—Consent.

Bethnal Green, South-west.—The retention of a building, consisting of a range of water-closets, on the western side of Paradise-row, Bethnal Green, with external walls and a boundary fence (Sir Joseph Causton and Sons, Ltd.).—Consent.

Greenwich.—A building on the west side of a street leading out of the south side of Greenwich-road, Greenwich, westward of the Royal Kent Dispensary (Messrs. Young and Hall for the Committee of the Miller Hospital and Royal Kent Dispensary).—Consent.

Southwark, West.—Buildings on the site of No. 54, Lant-street, Borough (Messrs. A. C. Potter and Co.).—Consent.

Hackney, Central.—The erection of houses on the west side of Woodland-street, Dalston, northward of Holy Trinity Church (Mr. D. P. Hayworth).—Consent.

Rotherhithe.—An addition at the rear of No. 42, Lower-road, Rotherhithe (Mr. E. P. Thompson for Messrs. A. J. White and F. S. Neame).—Consent.

Wandsworth.—A church on a site abutting upon the east side of South-street and north side of Iron Mill-place, Wandsworth (Mr. E. W. Mountford).—Consent.

Brixton.—Two cottages in an alley known as South-cottages, Warham-street, Kennington (Mr. G. Trotman for Mr. J. Skinner).—Refused.

Width of Way and Line of Frontage.

Finsbury, East.—Buildings upon a site abutting upon the south side of City-road, west side of Nelson-street, and east side of York-road, Finsbury (Messrs. Yetts, Sturdy, and Usher for Messrs. T. Wallis and Co., Ltd.).—Consent.

Kensington, South.—Two two-story bay windows to a building on the east side of Silver-street, abutting upon the south side of The Mall, Kensington (Mr. W. M. Weir for Messrs. H. and T. Harris).—Consent.

Battersea.—The retention of a bay window in front of the Battersea Liberal Club, Green-lane, Battersea (Mr. F. Banister for the Battersea Liberal Club).—Consent.

Lines of Frontage and Construction.

Islington, East.—An iron and glass covered way at the first floor level in front of Nos. 302 and 304, Essex-road, Islington (Mr. G. H. Lovegrove for Mr. J. King).—Consent.

Rotherhithe.—The retention of a grain shoot across Rotherhithe-street and of an iron bridge across Princes-stairs, Rotherhithe (Messrs. Gillman and Spencer (1902), Ltd.).—Consent.

City of London.—The retention of an iron and glass covered way over London-house-yard, City, connecting Nos. 79 and 80, St. Paul's-churchyard (Messrs. J. Spence and Co., Ltd.).—Consent.

Southwark, West.—A deviation from the plan approved for the erection of an open iron and concrete gangway to connect the fourth floor of "Clink Wharf," Clink-street, Southwark, with the roof level of "Soho Works" on the south side of the street so far as relates to the substitution of three 7 in. by 3½ in. H steel joists for two 9 in. by 4 in. H steel main supporting beams, and of chequered iron plate for the concrete floor of such gangway (Mr. R. H. Kerr for Messrs. Noel and Sons, Ltd.).—Consent.

Rotherhithe.†—The retention of two show-cases in front of No. 244, Southwark-park-road, Rotherhithe (Mr. S. J. H. Stuart for Mr. A. Neave).—Consent.

Stepney.—The retention of a wood and iron building at the rear, and of a show-case upon the forecourt, of No. 274, Commercial-road, Stepney.—Refused.

Formation of Streets.

Lewisham.—That an order be issued to Mr. C. J. Bentley sanctioning the formation or laying out of a new street for carriage traffic to lead out of the south-eastern side of Woolstone-road, Lewisham.—Consent.

Whitechapel.—That the application of Messrs. R. Plumbe and Harvey for an extension of the period within which the widening and adaptation as a street for carriage traffic of the northern portion of Romford-street, Mile-end Old Town, was required to be clearly defined throughout by posts and rails or so otherwise as the Council might permit, and thrown open to the public as a highway, be granted.—Consent.

Greenwich.—That an order be issued to Mr. C. Reilly, refusing to sanction the formation or laying out of new streets for carriage traffic, out of the west side of Victoria-road, Charlton (for the President and Governors of Queen Elizabeth's College, Greenwich).—Refused.

Hampstead.—That an order be issued to Messrs. Farebrother, Ellis, and Co. refusing to sanction the formation or laying out of a new street for carriage traffic, to lead from Redington-road to Bracknell-gardens, Hampstead (for Sir Spencer P. M. Maryon-Wilson, Bart.).—Refused.

St. George-in-the-East.—That an order be issued to Mr. A. Davis refusing to sanction a street for foot traffic formed at the rear of houses in Morgan-street, Stepney.—Refused.

Cubical Extent.

Hoxton.—A modification of the conditions upon which consent was given under sections 207 and 76 of the Act, to the erection at the Guttapercha Company's premises, Wharf-road, Hoxton, of a building with two divisions each exceeding in extent 250,000, but not 450,000 cubic ft., so far as relates to the omission of fire-resisting plaster, 2 in. thick, to five columns, on which columns cranes revolve, in the testing-tank room in the basement (Mr. P. E. Pilditch for the Guttapercha Company).—Consent.

Clapham.—The erection at the Brewery, Nine-elms-lane, Nine-elms, of a building to exceed in extent 250,000 cubic ft., and to be used as a bottling store (Messrs. Lee and Pain for Messrs. Thorne).—Refused.

Space at Rear.

Wandsworth.—A modification of the provisions of section 41 of the Act with regard to open spaces about buildings, so far as relates to the proposed erection of a building on the south-west side of Totterdown-street, Tooting, with an irregular open space about such building (Mr. W. Bartholomew).—Consent.

Woolwich.—A modification of the provisions of section 41 of the Act with regard to open spaces about buildings, so far as relates to the proposed erection of an addition to No. 2, Vernham-road, Plumstead, with an irregular open space at the rear (Mr. J. H. Sutch for Mrs. S. H. Smith).—Consent.

Line of Frontage, Width of Way, and Widening of Street.

St. Pancras, North.—A building upon the site of Nos. 9, 11, 13, 15 and 17, Highgate-road, St. Pancras, to abut also upon Greenwood-place, and in connexion with the erection of such building the widening of a portion of Greenwood-place (Mr. G. H. Greatback for Mr. W. A. Curnock).—Refused.

Buildings for the Supply of Electricity.

City of London.—A deviation from the plans approved for the construction of a five-story office building on the site of Nos. 82, 83, and 84, Fenchurch-street, City, so far as relates to (1) certain alterations of the positions of the movable partitions and the addition of an extra staircase between the ground and first floor; (2) the placing of all the lavatories on the fourth floor instead of distributing them over the various floors; (3) the addition of fireplaces in the rooms thus cleared of lavatories; (4) the placing of a lantern light over the fourth floor lavatories; (5) the omission of the skylight, which was formerly over the lavatories on the ground floor (Mr. W. E. Clifton for the Charing-cross and Strand Electricity Supply Corporation, Ltd.).—Consent.

Means of Escape at Top of High Buildings.

Strand.—Means of escape in case of fire, proposed to be provided in pursuance of section 63 of the Act, on the sixth (top) story of the Waterloo Hotel, Jermyn-street, St. James' (the upper surface of the floor of which story is above 60 ft. from the street level) for the persons dwelling or employed therein (Mr. G. D. Martin for the Waterloo Syndicate, Ltd.).—Consent.

Strand.—Means of escape in case of fire, proposed to be provided in pursuance of section 63 of the Act, on the seventh (top), sixth, and fifth stories of the Savoy Hotel offices (west block), Strand, for the persons dwelling or employed therein (Messrs. Collcutt and Hamp).—Refused.

The recommendations marked † are contrary to the views of the local authority.

ENGINEERING SOCIETIES.

SOCIETY OF ENGINEERS.—At a meeting held at the Royal United Service Institution, Whitehall, on the 3rd inst., Mr. D. B. Butler, President, in the chair, a paper was read on "Deep Sea Erosion and Foreshore Protection," by Mr. R. G. Allanson-Winn, M.Inst.C.E.I., and of which the following is an abstract:—The author first pointed out that, in considering coast erosion, in the majority of cases attention was given to the visible shore and the visible agencies of destruction, whilst the geological conditions and changes going on in the invisible depths of the sea were overlooked and neglected. The theory advanced by him was that, in all places where the encroachment of the sea was steady and continuous and the material was of a soft and easily eroded nature for a considerable depth below low-water level, protective devices erected on the visible shore between high and low water marks would not necessarily arrest the encroachment of the sea, though they might afford temporary protection by collecting and retaining material for short periods. It would not be denied that the sea bed was changing in many places, and the author said he did not lay claim to any fresh discovery in that direction, but he claimed to be the first to deal with the problem mainly from a new point of view, and to suggest that very often the encroachment of the sea was due more to erosion of material below low-water level than to what could be observed taking place on the exposed shore. It was this new aspect of the problem which appeared to be deserving of the closest attention, and the author observed that investigations should be made with the view of discovering to what extent the unseen foe might be committing depredations in any particular locality, how far the theory applied to any place, and what measures should be taken to mitigate the evil. Instances were cited of places on the east coasts of both England and Ireland where, in the opinion of the author, that class of erosion was especially marked. An account of the inland march of the sea at Glenbeigh during the past fifty years was given to show how persistently deep water had advanced, whilst additional evidence was produced to prove a similar state of affairs all along the Holderness coast of Yorkshire, where might now be pointed out situations, in the neighbourhood of the present five-fathom line, where formerly towns and villages stood on the dry cliffs. The author held that additional absolute proof of deep-sea erosion was to be found in the carrying up of sand, shells, and large stones attached to the *laminaria digitata* and various deep-sea weeds. Those materials could only come from depths below low-water level, and it was certain that on their removal the vacancy caused must have been, in the first instance, filled up by sea-water, and that therefore the depth of water at that particular spot must have been greater than it was prior to the removal. In other words, the erosion had caused an advance of deeper water shorewards. Allusion was made to the possibility of the sinking or subsidence of certain coast lines and the rising of others. The author stated that he had heard that the south of Ireland was subsiding and the north rising, and that in Norway the inhabitants showed certain marks on the rocks which were formerly washed by the waves, but which were now far beyond the reach of even the highest tides. He stated, however, that he had had no opportunity of investigating those alleged alterations of levels, and, of course, any comparison of shore levels with adjacent bench marks would only be misleading, as the bench marks themselves would probably have sunk as well as the neighbouring country. The author suggested that a clearer view might be arrived at if we regarded as "sea bed" all surfaces actually beneath the sea at highest spring tides. If that view were accepted, we could more easily eliminate from our minds the popular fallacy that all our troubles began and ended in the changes observed on the little strip of visible shore between high and low water marks. He observed that it had been so long customary to speak of "beach," "shore," or "foreshore," as quite distinct from "sea bed" or "sea bottom," that we might get into the habit of regarding them as not being continuations of the same surface. We had, for example, been in the habit of regarding the shore as a natural bank with a very flat gradient, the toe of which extended to low-water mark. It would be more correct to look upon the junction of the glacial drift or other erodible material with the chalk, rock, or other hard material as the toe of the bank under consideration, quite irrespective of whether the junction was above or below low-water level. Alluding to protective devices, the author described a form of slanting and curved groyne which he thought might be applied to many shores with advantage. He claimed that that form of groyne combined many of the advantages of the high slanting groynes and the low groynes. In conclusion, the author mentioned that he believed he had discovered an entirely new method of groyning, and that, as soon as he had given his discovery a practical test, he would bring the subject before the Society.

COMPETITIONS.

STAMFORD FREE LIBRARY.—Messrs. Buckland and Farmer, who were given as the winners of the second premium in this competition, write to say that the name of Mr. G. H. Vernon Cale should have been given, as their partner in the preparation of the design. The mistake is not ours; we gave the list as officially communicated.

THE PROPOSED CONCERT HALL AND PAVILION, AYR.—The Town Council at a special meeting on the 29th ult. considered a report by Mr. James A. Morris, F.R.I.B.A., Ayr, who had been appointed assessor on the twenty-nine competitive plans for the proposed concert hall and pavilion on the Low Green. Mr. Morris placed first the plans sent in by Mr. J. K. Hunter, Ayr, and bracketed equal the designs submitted by Mr Henry Higgins, jun., 248, West George-street, Glasgow, and by Mr. Eric A. Sutherland, 96, Renfield-street, Glasgow, and Messrs. Magnall and Littlewoods, 42, Spring Gardens, Manchester, jointly. In accordance with the assessor's decision Mr. Hunter was awarded the 50*l.* premium, and it was agreed to give 25*l.* to each of the next two.

SCHOOL, ACCRINGTON.—The Accrington Town Council in committee on the 3rd inst. rejected a recommendation from the Education Committee that plans for a new day school at Woodnook be prepared by the Borough Surveyor, and that the latter should be paid an honorarium of 200*l.* This work is to be thrown open to competition, and 400*l.* awarded to the successful architect. —*Yorkshire Post.*

Books.

The Cathedrals of Northern France. By FRANCIS MILTOUN. London: T. Werner Laurie. 1904.

THIS is an octavo volume of nearly four hundred pages—perhaps a small space into which to compress an adequate description of so large a subject. The author appears to have devoted much time and labour to this work, and to have personally visited the buildings. He has no doubt endeavoured, as suggested in the introduction, to produce something that has little resemblance to a guide-book, and the letterpress is chiefly a record of personal impressions and criticisms interwoven with a certain amount of technical detail and historical facts. Whether so large a subject can be dealt with satisfactorily in this way is doubtful, and, although there is a certain charm in portions of the work, the whole fails to impress, and at the same time suggests the desirability of conciseness in arrangement. No less than ten appendices are at the end of the book, much of the information in which might well have been incorporated in the descriptions. A glossary of architectural terms —which seems an almost inevitable adjunct to this kind of book—is included.

The illustrations and plans are of the poorest possible description. It is inconceivable that, in these days of improved book illustrations, such drawings of Nôtre Dame, Beavais, Chartres, and Amiens—to mention but a few—should find a place in the book at all. It would have been far better had they been omitted. And when at the beginning of the book we find the book dedicated to "the genius of the race which made possible the existence of these architectural glories of France," it seems quite unaccountable that more care was not taken to make the illustrations worthy of the subject. In Appendix No. 6, which has a series of plans to a very small scale, plans of portions of the city are in three instances introduced instead of the plan of the church. There is no plan of Chartres and several of the lesser buildings given in the list.

With adequate illustrations and plans the book would be vastly improved; and it would be well if the somewhat ghostly representations of four cathedrals on the cover were omitted.

Hints on the Planning of Poor-Law Buildings and Mortuaries. By ALBERT C. FREEMAN, architect. London: St. Bride's Press.

THE paper, type, and binding of this book are so admirable that the reviewer brings to the reading of it a mind prepossessed in its favour. His pleasant anticipations, however, are soon shocked by the slipshod English in which it is written. The second paragraph of the first chapter (page 11) is an early example, but many others occur throughout the book. On page 22 there are two, which we quote as specimens:—"The building, if planned with two wings or projecting blocks at the rear of the building, the male and female accommodation can be satisfactorily arranged in the respective wings or blocks"; "Apartments are necessary in a large infirmary for an assistant medical officer in addition to the medical officer, and be situated as to afford complete privacy." On page 39 the author is unconsciously humorous—"Wards provided for epileptic patients should be placed on the ground floor level, *this class of patient being subject to fits.*" The italics are ours.

We hasten to add that the author's general treatment of his subject is better than his grammar. He discusses in turn the various rooms and buildings which go to the making of a complete workhouse, including the buildings for casuals and vagrants, the administration buildings, receiving-wards, buildings for the able-bodied, aged and infirm, isolation and maternity wards, mortuaries, laundries, etc. The subject of "Cottage Homes for Children" is also fully treated. Many excellent hints are given,

and the requirements of the Local Government Board are clearly stated. The illustrations are a valuable feature, and include many examples of buildings or parts of buildings designed by well-known architects. With one exception, the north points are not marked on the plans; this is a serious omission, and is not rectified in the text. Precise hints on the best aspect for the various rooms, and particularly for the wards, ought certainly to have been given.

Model Answers to Questions Set by the Sanitary Institute. London: The Sanitary Publishing Co. 1904.

IT is not an easy matter to answer examination questions tersely and accurately, and we fear that some of the answers given by the anonymous author of this volume would fail to obtain the full number of marks. In his "Advice to Candidates" he says wisely, "before answering a question, it should be read, and read again, until it is thoroughly understood," but he does not always practise what he advises. The answer to Question 23 ignores the first part of the question and does not adequately consider the subordinate clause in the second part. Question 108 asks, "What are the contents in cubic feet" of a certain room? The author cuts off 3 ft. from the side of the room, "on account of the lowness of the sloping part of the ceiling"—it is 7 ft. high at the lowest part—and gives the cubical contents of the remaining portion. This is not a correct answer to the definite question. "Why is a valve-closet inserted for use as a slop-sink?" is not answered by giving objections to such use. In the next answer the author omits to mention pail-closets, although the question specifies them, and also ignores the "economic" merits and demerits of the different types of closet. He appears, also, to forget that the Sanitary Institute hold an examination in "Practical Sanitary Science," which is attended by many who are not sanitary inspectors; and he makes the mistake of introducing a great deal of irrelevant matter as to the powers of sanitary inspectors into his answers to questions of a purely practical nature. Question 141 asks plainly, "What points should be specially considered in testing drains and soil-pipes?" The answer contains about 160 words entirely irrelevant to the question, and devotes only sixty words to an answer in which soil-pipes are not mentioned. A still worse example is the answer to Question 145—"How would you inspect the concrete and brickwork in a house in course of erection?" The answer contains 400 words, of which 350 are superfluous and the remaining fifty are a sanitary inspector's evasion of the direct question. These are not the only answers which appear to us to be defective or erroneous, but it is unnecessary to give other examples. The book is evidently written for sanitary inspectors, and many of the answers are quite accurate and to the point. May we suggest another scrap of "Advice to Candidates"? "Never say anything about matters not directly included in the question; if you do, you exasperate the examiner, and also increase the possibilities of error."

Heating and Ventilation of Houses. By C. F. TOWNSEND, F.C.S. London: Dawbarn and Ward. 1904.

THIS is one of a series of "Rural Handbooks." It is a little book of thirty-six pages, and, as about one-fourth of the space is occupied by illustrations, it is obvious that the subject is not treated in an exhaustive manner. The author is in favour of admitting air to a house by means of a downcast shaft, the top of which is 20 ft. or 30 ft. above the ground, but this is not such an easy matter as the author appears to think; the shaft can be built, but whether the air will always flow down it is another matter. In the part on heating, we look in vain for some of the most modern types of fire-grate. The author writes lucidly and to the point, and the book is clearly printed on good paper.

Old West Surrey. By GERTRUDE JEKYLL. London: Longmans, Green, and Co. 1904.

THIS book is a record of the old buildings, furniture, industries, and habits of the people of West Surrey, and, though pretending to no literary style, is yet a most pleasant book to read. There are more than three hundred illustrations from photographs, taken by the author. The cottages are familiar to many who do not know Surrey, for they are the same that Mrs. Allingham so often gives us in her pictures. There are two photographs of new cottages on an old pattern, which are very charming. There are also some delightful specimens of furniture, especially the oak linen-hutch on page 51 and the chairs on page 60.

One chapter deals with the people themselves and their old sayings and doings, another with their clothes, and one, perhaps the most interesting of all, treats of "churchyards then and now." In connexion with this subject the author has some excellent remarks on the difference between ancient and modern churchyard monuments:—

"In the older days, monuments in country churchyards erected to the memory of people of means and of some importance of standing were specially designed by a competent architect. Often they took the form of fine altar-tombs—monuments of much dignity, excellent in proportion, with sufficient and well-placed ornament and well-drawn mouldings. . . . The monuments, if any, to members of the labouring class or people who could not well afford stone were the dignified but unpretentious grave-boards. Each district had a traditional pattern of finial at the heads of the posts and of ornamental outline of the lower edge of the board. The latest I know in this district bears the date 1861. It is much to be regretted that this simple form of monument should have passed out of use. The cast-iron crosses from the ironmonger's pattern-book are but a sorry substitute for the honest piece of carpenter's work made in the dead man's own village, perhaps by a younger man of his own blood; in any case by one who was known to him.

"It is this invasion of the pattern-book and love of meretricious display that is so regrettably spoiling our churchyards. It was a sad day for the most hallowed spots of English ground when traders introduced from the Continent and pushed into public notice those artificial wreaths under half round glasses that debase and disfigure so many of these sacred places. . . . I have seen as a monument over a grave (in France) an iron erection exactly like a hat-stand, with pegs for the holding of bead-work wreaths. Is this honouring the dead? Let us jealously guard and treasure the quiet beauty and dignity of our country churchyards and, above all, keep them from the desecration of anything ill-designed, mean, or tawdry."

Minehead, Porlock, and Dunster. By C. E. LARTER. Second Edition. London: The Homeland Association. 1904.

NOTHING but praise can be said of this excellent guide—one of the Homeland Series—with its interesting and brightly-written letterpress and capital illustrations—chiefly from photographs, but including some from drawings by Mr. Gordon Home. The district of Exmoor and that which lies immediately to the east, on the Somerset side, is full of most picturesque villages. Minehead itself has in recent years become a flourishing watering-place, without losing, however, the picturesqueness of the old port and village; and there are numberless points of interest and attraction in the villages between it and the Quantocks, including Dunster, and the Cistercian Abbey at Cleeve. West of Minehead is Porlock. All are well illustrated and described, and four chapters are added on the stag-hunting, fishing, and geology of the neighbourhood.

BOOKS RECEIVED.

STUDIES IN ASTRONOMY. By J. Ellard Gore, F.R.A.S. (Chatto and Windus. 6s.)

THIRTY-THIRD ANNUAL REPORT OF THE LOCAL GOVERNMENT BOARD. (Eyre and Spottiswoode. 4s. 11d.)

A HANDBOOK TO AGRA AND THE TAJ. By E. B. Havell. (Longmans, Green, and Co. 5s.)

SUNDIALS: PAST AND PRESENT. By T. Harrison Myres, F.R.I.B.A.

PRACTICAL SURVEYING. By G. W. Usill, A.M.Inst.C.E. Eighth edition, revised and enlarged by A. Beazeley, M.Inst.C.E. (Crosby Lockwood and Son. 7s. 6d.)

A DOULTON PANEL FOR RUSSIA.—Messrs. Doulton have on view a large ikon, 15 ft. 10 in. by 11 ft. 9 in., executed to the order of Mr. Robert Meltzer, Court Architect, for the Orthopædic Hospital now being built in St. Petersburg. It is to be built into the outside front wall, and is in a hard-fired material to resist the extreme cold.

TRADE CATALOGUES.

MR. J. S. HENRY sends us five little books of wooden electric fittings. The illustrations show either hanging or standard lamps. Wood is a material that has not been much used in this connexion, and it has distinct possibilities of artistic treatment. The designs shown in this catalogue are almost entirely new ones, and, with few exceptions, are of considerable merit. One advantage of the use of wood in place of metal is the saving of expense. We do not remember to have seen before fittings at such a reasonable price.

Messrs. Orenstein and Koppel send us their catalogue No. 620, chiefly occupied with illustrations of requisites for portable railways, contractors' trucks, and wagons of various types, incline and overhead railways, tank locomotives, and of the concrete mixer made by this firm. Very little descriptive matter is given beyond the mere names of the different objects, but the pamphlet will be found useful to contractors and others using plant of the kind illustrated.

We have received from the General Electric Co., of Queen Victoria-street, a new edition of their catalogue of main switches and cut-outs. The class of switch described seems admirably adapted for its purpose, the break being very long and being made very rapidly. The "Adelphi" switches, which are contained in an iron case, are very substantial, and should meet the requirements of those who use motors working at high pressures. We are glad to see that the cut-outs are made with a sufficiently long break, and that a large clearance is left between the conducting metal parts and the case. The "bobbin" and "arch" types of fuses which are made of porcelain are well known and are very suitable for main switchboards.

The Student's Column.

NOTES ON PORTLAND CEMENT.

CHAPTER X.—THE ACTION OF SEA-WATER.

THE failure of cement concrete at Aberdeen Harbour in 1887 caused a considerable amount of anxiety amongst engineers who were using Portland cement for sea-water work. The reports of Mr. Smith, the Harbour Engineer, in conjunction with Professor Brazier, of Aberdeen University, went to show that the action of sea-water had a decomposing effect on cement. In this opinion they were supported by the late Mr. Messent, an engineer of considerable experience in sea work. After a great amount of chemical and physical research by these gentlemen, the conclusion drawn was that the sea-water had a dissolving action on the cement, as shown by the amount of magnesia in the concrete taken from the dock walls. Professor Brazier attributed the presence of this magnesia to the sea-water dissolving the lime out of the cement and the solution of lime precipitating the magnesia from the sea-water. To corroborate his views, he digested cement in a powdered state with sea-water, with constant stirring to prevent it setting, and found that a certain amount of lime was dissolved out and a quantity of magnesia deposited.

Professor Brazier, however, lost sight of the fact that, by preventing the cement from setting, the free or loosely-combined lime in all Portland cements was not allowed to form the compounds which would resist the action of the sea-water. It does not follow because a cement in the powdered state is acted on by the salts in sea-water, that the same cement will be decomposed after setting, as its chemical constitution is quite altered in the process of setting.

It was afterwards conclusively shown that the Aberdeen failure was due to poor quality cement, excess of sand, and the porosity of the concrete.

Candlot investigated the action of sea-water on mortars, his experiments extending over a period of forty years.

The mortars were of Portland cements, natural cements, puzzolanas mixed with lime and sand, trass, etc. The Portland cement blocks remained in good condition, while nearly all the others completely lost their cohesion at different periods. Neat cement was found to be more rapidly acted on than cement and sand mortar, and the mortars offering the greatest resistance were those consisting of 1 part cement to 1 or 2 parts sand, or a proportion

of cement sufficient to fill the voids between the grains of sand, this making the least porous mortars.

Le Chatelier has shown that compounds of aluminium are the constituents of cement most subject to attack by sea-water. The decomposition arises from the action of calcium sulphate on the aluminate of lime, and the calcium sulphate is itself produced by a reaction between the lime in the cement and the sulphate of magnesia in the sea-water. The disintegration is the greater the larger the percentage of alumina in the cement; thus, with cement containing 1 to 2 per cent. it is very slight, while with 7 or 8 per cent. the swelling in sea-water is marked.

With the view of producing a mortar more stable in sea-water, Le Chatelier investigated the effect of replacing alumina by other oxides not re-acting with sulphate of lime. The constituents tried were oxides of iron, cobalt, chromium, and manganese. The cements thus prepared were found to be more stable in the presence of sulphate of lime than those containing much alumina, the best results being obtained with Fe_2O_3.

Le Chatelier also observed that cements having small percentages of lime are less attacked than those with more lime and an equal percentage of alumina, and that addition of puzzolana does much to mitigate the chemical action of sea-water.

Michaelis has supplied some valuable information on the action of sea-water on Portland cement. He maintains that Portland cement, from a chemical point of view, is too high in lime. Cement containing 61·04 per cent. of lime would leave after setting 13·79 per cent. CaO unsaturated. In a cement of average composition with 1 part silicate to 2 parts lime 25 per cent. CaO or 33 per cent. $Ca(HO)_2$ would be segregated. A body containing a substance of such strong chemical affinity as free lime cannot be regarded as stable. The free lime will continue to react till it forms saturated compounds.

When the mortar hardens in air or water containing CO_2, the lime is converted into carbonate, but in sea-water it is chiefly the sulphates which act on the lime.

The formation of the sulphate of lime with two equivalents of water causes a considerable increase of volume, and may destroy the cohesion of the mass.

With the formation of sulphate of lime, the production of lime-alumino sulphate goes hand-in-hand, and causes an enormous increase of volume and a total destruction of the cohesion, for this double compound crystallises with at least thirty, probably sixty, equivalents of water, and, in doing so, converts the strongest mortar into a mud, the only parts of which retaining any cohesion being those protected by the formation of carbonate. Even if cement blocks be exposed to air till a protective skin of carbonate is formed, such a skin cannot attain any considerable thickness, and the chemical action to which the destruction of the cohesion may be attributed will eventually take place.

In order to ascertain the action of carbonic acid and sea-water on the strength of concrete, a series of experiments were carried out by Michaelis.

Two sets of briquettes were made up according to the German standard rules, one composed of 1 part by weight of cement to 3 parts by weight of sand, and the other 1 part of cement to 5 parts of sand. These briquettes were allowed to harden twenty-four hours in air, but protected from CO_2, then placed in boiled distilled water for fifty-six days, the vessel in which they were kept being hermetically sealed. Half of the briquettes were then treated with moist CO_2 for thirty-five days, and were finally returned to the closed vessel, in which they were kept twenty-nine days longer. When tested, the briquettes were, therefore, 120 days old. The 1 to 3 mortar protected from CO_2 gave a tensile strain of 148 lb. per sq. in.; while the briquettes treated gave 156·7 lb. per sq. in. The crushing strength was 1,699·5 lb. and 1,859 lb. respectively. The 1 to 5 mortar gave tensile strain of 77 lb. and 92·4 lb. per sq. in. and a crushing strength of 616 lb. and 759 lb. In the 1 to 3 briquettes only 13·3 per cent. and in the 1 to 5 briquettes 24·8 per cent. of the total lime was converted into carbonate.

Immersed in sea-water or a 0·2 per cent. solution of magnesium sulphate, the briquettes which had been protected from the action of CO_2 soon disintegrated, and even those which had been carbonated were strongly attacked in seven weeks, especially the 1 to 5 mortar.

In fresh-water the conditions are more favourable, for only the free lime can be dissolved or converted into carbonate.

The more lime is dissolved out, the more insoluble are the residual silicates and aluminates. The magnesia which is deposited during the action of sea-water upon cement mortar is a preservative agent which tends to close the pores of the mass. It would be more correct to speak of the injurious action of the sulphates in sea-water than to attribute such action to the magnesium salts, although it is true that magnesium sulphate is the special salt which acts in sea-water. The sulphates of lime or the alkalies, in fact any soluble sulphate, have the same destructive action, but do not act with the same degree of energy.

Michaelis finds that those cements which are richest in lime offer least resistance to sea-water. A mortar containing free caustic lime is as unstable from a physical as from a chemical point of view, as by reactions already explained great internal strains are produced and expansion and cracking continues sometimes for years.

All these defects may be avoided by offering to the lime, which remains or becomes free during the hardening process, hydraulic silica or alumina, with which it can form more stable compounds. The addition of trass or of an efficient puzzolana to hydraulic cements containing an excess of lime, such as Portland cement, can increase the strength of mortar very considerably and render them stable in sea-water. Hydraulic cements which contain more lime than is required to form stable hydrosilicates and hydroaluminates should not be used for marine work unless improved by the addition of substances, such as those named.

Sea-water, no doubt, attacks unset cement, for, if a pat of cement be placed in it immediately after gauging, in a short time magnesia will be found to be deposited, and the surface of the pat will be soft, while the inside will be perfectly hard.

This would point to the advisability of using a quick-setting cement for sea work, so as to allow of as little action as possible. It has been sufficiently proved that sea-water, when allowed to pass through concrete, has a destructive action; but it has also been conclusively proved that, if the concrete is made dense so as to present as little surface as possible to the action of the sea-water, there is not much to fear from the action of the latter.

As set and dense concrete is but little acted on by sea-water, the block method of construction appears to be the best. The sack method adopted by Mr. Carey at Newhaven, is no doubt good, as it keeps the concrete in a dense mass till set, but, as Mr. Carey himself remarks, in the use of large masses by this system a great deal depends upon the rapid mixing of the concrete so that the sack may be placed in its allotted position before setting commences, otherwise not only will it not settle down in its place properly, but the strength and homogeneity of the mass will be impaired.

LAGOS MAHOGANY.

IN the annual Blue Book for the Colony of Lagos for the year 1903, it is remarked that the timber industry may be said to have had its inception in 1897, when 275 logs, valued at 1,722*l.*, were exported. This industry, which has now become an important one, is subject to very considerable fluctuations, as may be seen from the following figures, which represent the exports of timber for the last five years:—1899, 7,680 logs, value 34,738*l.*, or an average of 4*l.* 10s. 5d.; 1900, 13,250 logs, value 58,374*l.*, or an average of 4*l.* 8s. 1d.; 1901, 4,540 logs, value 12,216*l.*, or an average of 2*l.* 13s. 10d.; 1902, 12,049 logs, value 33,292*l.*, or an average of 2*l.* 15s. 3d.; 1903, 15,785 logs, value 56,167*l.*, or an average of 3*l.* 11s. 2d. The market value, as shown by these figures, varied largely, and there can be no doubt that the high prices obtained in 1899 and 1900 stimulated this trade to such a degree that a great many immature trees were brought into the market, and hundreds or thousands of logs that were found to be unsaleable were left to decay and rot in the forests and rivers of the territory. The destination of the timber exported during the two last years has been:—1902, to Germany, 1,261 logs, value 3,939*l.*; to Great Britain, 10,652 logs, value 28,846*l.*; to New York, 136 logs, value 507*l.* In 1903, to Germany, 1,328 logs, value 3,800*l.*; to Great Britain, 14,170 logs, value 51,850*l.*; to New York, 287 logs, value 517*l.* Many immature trees are still being cut down and wasted, to no present profit, but to the great prejudice of the future. All the forests are native property, and practically all are at present beyond the direct jurisdiction of the Colonial Government. Efforts that were made to regulate the industry so as to protect the forests from the waste and mismanagement that still go on were, to a large extent, frustrated, and the forest law that was passed by the Legislature is, in the form in which it had to be promulgated, quite inadequate to preserve the forests. The only really valuable remedial measure that has been applied, is the setting apart of considerable forest reserves, which have been put by the native owners into the charge of the Colonial Government for a period of fifty years. This will at least preserve a sufficient number of hardwood trees to supply seed for future planting. Unless the forests are brought under the control of the Government in a way that is not the case at present, it would be futile to look upon the timber industry as a permanent one of important dimensions. It is but too manifest that the forest area is being steadily reduced by the inroads of the farmer. This is more particularly noticeable in the central districts. The forest soil is richer and more fertile than land that has been recently cultivated, and there is thus a strong temptation to constantly clear and plant new fields at the expense of the forest. At the same time the natives have a great love for trees, and one of their very best instincts is the planting and preserving of numerous beautiful shade trees in their towns. But they have not yet learned generally the importance and the great value of the forests in retaining moisture and providing permanent articles of export, if prudently managed. In fact, the idea of forest management is new to them, and much time and patience is required to bring this home to the native mind. In many parts of the country only the hardwood tree has been left standing to indicate to the observant traveller that at no very remote date a much greater area than at present was covered by forest, all of which has been cleared away and destroyed, except the great and beautiful "Iroko" tree, which has been spared through the fact that some wise and thoughtful priest dedicated that tree to a sylvan deity, whose abode it is, and whose living temple has thus escaped the hand of the destroyer until now, when it is being cut down in the interest of trade. What is most required at present is a stringent general law to prevent the cutting down of immature hardwood trees.

METROPOLITAN ASYLUMS BOARD.

THE usual fortnightly meeting of the Managers of the Metropolitan Asylum District was held on Saturday last week at the offices of the Board, Victoria Embankment.

Among a large correspondence received from the Local Government Board were letters sanctioning the following, among smaller works:—Enlargement of workshops at the Western Hospital, 285*l.*; additional male staff mess-room and store accommodation at the Western Hospital, 595*l.*; works in connexion with the laundry at Leavesden Asylum, 1,800*l.*; alterations and additions at Belmont Asylum, 1,730*l.*; fire exits at the South-Western and Eastern Hospitals, 169*l.*; cottages for married attendants at Leavesden Asylum, 350*l.*; additional infirmary accommodation for imbeciles at Leavesden and Caterham Asylum, 1,825*l.*; and additional storage accommodation at White Oak School, 275*l.*

Southern Hospital.—The Works Committee reported that they had authorised the issue on the contractors, Messrs. Johnson and Co., of orders for sundry extra works amounting in value to 185*l.* 16s.

Tooting Bec Asylum.—On the recommendation of the Committee, Messrs. Fowler and Hugman were appointed to take out the quantities of the proposed additional buildings at Tooting Bec Asylum.

North-Western Hospital.—The Board approved and adopted a plan, prepared by the Engineer-in-Chief, of a cottage for the resident engineer at this hospital. The estimated cost of the building is 500*l.*

Leavesden Asylum.—The Asylums Committee submitted a report by the Engineer-in-Chief on the working of the water-sterilising and softening apparatus which has been installed at Leavesden Asylum. The conditions of the contract had been complied with in all particulars except that of the softening of the water. The contract required that the hardness of the water should be reduced to 7 deg., but, as yet, the apparatus had reduced it to only 9½ deg. The

contractors, however, considered that the softening of the water would improve, and had agreed that the plant should be put into ordinary working practice for three months. This agreement was accepted.

OBITUARY.

MR. HUNT.—The death is announced of Mr. Henry Arthur Hunt, of the firm of Messrs. Hunt and Steward, of No. 45, Parliament-street, Westminster, surveyors, and of No. 19, Warwick-square, Pimlico. Mr. Hunt died at Penzance on September 26, aged sixty-eight. He was a son of the late Sir Henry Arthur Hunt, C.B., who, during a long period, was Consulting Surveyor to H.M.'s Office of Works. On leaving Westminster School Mr. Hunt adopted the profession of surveyor, and having received some practical training in Thomas Cubitt's workshops, and in the offices of Philip Hardwick, the architect, he entered his father's office. He was the honorary architect of the new junior school at Clapham Junction for the Royal Masonic Institution for Girls, 1902-3; his firm were, we believe, architects of the buildings on the Thames Embankment for the Thames Conservancy, and, in Regency-street, Westminster, for the Canteen and Mess Co-operative Society. Mr. Hunt was a Fellow of the Surveyors' Institution, and held the appointments of surveyor to the Royal Commissioners for the Exhibition of 1851, the Paddington Estate Trustees, the Dean and Chapter of Westminster, the Corporation of the Sons of the Clergy, and the Chelsea property of Lord Cadogan. He took an active part in the management of several of the Westminster eleemosynary and educational charities, and was a Governor of the Emanuel, Greycoat, and United Westminster Schools. He served on the House Committee of the Royal Masonic Institution for Girls, and in recognition of his services to the craft was, in 1891, raised by his present Majesty, then Grand Master, to the rank of Past Grand Superintendent of Works.

GENERAL BUILDING NEWS.

NEW BOARD-ROOM FOR THE SOUTH SHIELDS UNION.—The extensions and improvements which have been carried out at the South Shields Union offices in Barrington-street have now been completed, and the new board-room for the Guardians has been opened. The new buildings comprise, on the basement floor, an applicants' waiting-room at the rear, with offices for relieving officers adjoining. The entrance to the ground floor is by a hall, approached from Barrington-street, on the left of which is the old board-room, which has been converted into rate collectors' and overseers' offices, registrars' office, and waiting-room. Rooms are also provided on the ground floor for the vaccination officer, superintendent relieving officer, etc. On the first floor are the clerk's, general, and private offices, committee-room, etc., and at the rear is the new board-room, 36 ft. by 28 ft. It has a barrel vaulted roof, the ceiling decorated in white and gold, and a dado panelling of oak. The main staircase is constructed of concrete, with ornamental metal balustrading, and is lighted from the roof. There are rooms for the caretaker, and store-rooms on the second floor. Two fire-proof rooms are provided for the storing of books and documents. The work has been carried out by Mr. J. C. Nichol, contractor, South Shields, from designs prepared by Mr. J. H. Morton, architect, South Shields.

PUBLIC LIBRARY AND HALL, HATTON, N.B.—The foundation-stone of the new Hatton Public Library and Hall was laid a short time ago. The building is to have a frontage of 50 ft. On the ground floor will be a lending library and reading-room, each 28 ft. long by 20 ft. broad, also ladies' and gentlemen's wating-rooms, cloak-rooms, etc., with a vestibule. Above is to be the hall, 51 ft. long and 28 ft. wide, exclusive of a gallery, and which will accommodate 350 people. In addition, there is to be a sunk floor, in which there will be a kitchen and heating chamber, the lending library, reading-room, and hall being heated by hot-water pipes. Ordinary fireplaces will be provided in the waiting-rooms. The building is to be erected of rubble blocks, while the front is to be of snecked ashlar; and the inside is to have pitchpine flooring, lining, and finishings. The contractors for the work are:—Mason work, Mr. Edgar Gall, Aberdeen; carpenter work, Davidson and Son, Hatton; slater work, James Greig, Peterhead; plaster work, Alexander Kelman, Peterhead; plumber work, John Davidson, Peterhead. The architect is Mr. William Davidson, of Ellon.

RENOVATION OF PARK CHAPEL, CROUCH END.—The work in connexion with the renovation of the interior of this church has now been finished, and the building was recently re-opened after having been closed for several months. The work has consisted of re-colouring the woodwork with a lighter tint. The walls are light green in the upper parts, with a dado of dark green near the ground, and a border of salmon hue round the windows. The ceiling is cream colour, and the wooden beams are two shades of light oak. Messrs. J. Grover and Sons, of Islington, were the general contractors. New heating apparatus has been installed by Messrs. Rosser and Russell. The method of heating is by hot water at low pressure and in three circuits. Ordinary gas lighting has been replaced by the electric light, by Messrs. Duncan, Watson, and Co. The ventilation has been attended to, and electrically-driven fans have been inserted in the roof. The plans for the improvements were prepared by Mr. Alfred Conder, architect, and the cost has been 1,200*l*.

FEVER HOSPITAL, SEACROFT, LEEDS.—A new fever hospital near Seacroft has just been erected for the Leeds Corporation. The foundations of the present buildings were laid in 1900, and now there are some forty blocks ready for immediate use. The hospital buildings cover 42 acres, and are built on the one-storied-pavilion principle, and connected by means of covered ways. There are more than twenty of these pavilions, each containing thirty beds. Eight pavilions are set apart for scarlet fever cases, four for diphtheria, and four for enteric, whilst others are to be used as observation and convalescent wards. The pavilions are raised on arches 5 ft. above the ground. A total of 452 cases can be treated at one time, these being made up of 240 scarlet fever cases, sixty diphtheria, 104 enteric, and forty-eight isolated cases. In the administrative and residential blocks accommodation will be provided for 100 nurses and seventy female servants. The male staff will number over thirty, and there will be sixteen cottages for married servants. The main contract was obtained by Messrs. H. Arnold and Sons, of Doncaster, for 198,000*l*. Mr. E. T. Hall, of London, has been the architect, with Mr. A. Turner, of the Corporation, clerk of the works.

SCHOOL, ABERAVON.—The new Aberavon infants' school was opened recently by Dr. Morris, the Chairman of the Glamorganshire Education Committee. The school is situated facing the Causeway, and is built of red pressed bricks, with Bath stone dressing. It has two entrances—one in the Causeway and one in Charles-street. The building consists of entrance-hall, cloak-room with lavatory, mistress's room, corridor, and four classrooms, which have accommodation for 204 children. The playground consists of two levels, in all about 1,000 yds. square. The entire cost of the building was 3,000*l*. The architect for the schools was Mr. J. A. James, Port Talbot, to whose plans the work was carried out by Mr. E. G. Groom, contractor, Aberavon, the clerk of the works being Mr. J. Williams, Taibach.

CHURCH, MIDDLESBROUGH.—On the 28th ult. the Archbishop of York (Dr. Maclagan) dedicated the new district Church of St. Michael's and All Angels, which has just been erected in Waterloo-road, Middlesbrough. The new building has been erected at an approximate cost of 6,000*l*. On the ground floor is a parochial hall, 57 ft. by 44 ft. The vestries and committee-rooms are on the same floor, and have a staircase leading to the church, which is on the second story. Lavatories and cloak-rooms are provided in connexion with the hall. The church proper is 96 ft. by 44 ft., and is approached by a wide open staircase. The seating throughout is of pitch-pine. The building is of common brick, with ornamental brick and stone dressings, and has been erected by Messrs. Bastimon Brothers, contractors, of Middlesbrough. Mr. William Duncan, of Middlesbrough, is the architect.

ISOLATION HOSPITAL, NEAR HEREFORD.—The Hereford Rural District Council, with which the neighbouring authority of Weobley has combined for isolation purposes, have erected a new hospital on land at the extreme end of Stretton Sugwas parish, bordered by outlying portions of Burghill, Credenhill, and Tillington. The principal building is the isolation hospital and wards for the reception of infected patients; and the male and female wards are placed on either side of the main entrance. These are 25 ft. by 25 ft., and 13 ft. high. The walls and ceilings are coated with granite silicon plaster. Attached to each ward are annexes with necessary slop sinks, and closet arrangements. The floors of the hospital are of cement concrete, and the wards are warmed by grates having slabbed tiles. Between the two wards is the nurses' duty-room, having fixed inspection windows overlooking both wards. Attached to the nurses' room are a scullery and larder and office. A bath is provided in the main hall, and also a linen stores. In close proximity to the isolation hospital is situated the residence for the nurses and caretaker. The discharge block consists of an infected ward, a bath-room for medicated bath before discharging patients, and a disinfected-room. The range of outbuildings comprise wash-house, disinfecting chamber, coal-house, office, and mortuary. The whole of the buildings throughout have been erected with red local bricks, relieved with buff brick string courses and arches; the roofs are all boarded, and covered with best Broseley tiles; and the walls are cavity walls. Each of the four buildings has tanks in the roofs for the supply of the pure water from a well. Three rain-water tanks underground are provided to the respective buildings. The buildings have been carried out under the direction and superintendence of the architect, Mr. Ernest G. Davies, the builder being Mr. Charles Cooke. The total amount of the contract was 2,050*l*.

COMPLETION OF EDINBURGH NEW COUNTY BUILDINGS.—The new County Buildings for Edinburgh, which have been erected between Parliament-square and Melbourne-place, have been completed, and will be opened shortly. The buildings are in the style of the later English Renaissance, and the total cost has been 40,000*l*. The architect is Mr. James M'Intyre Henry, Edinburgh, and the sculpture work was executed by Mr. W. Birnie Rhind, A.R.S.A.

WESLEYAN CHURCH, STOCKTON-ON-TEES.—A new Wesleyan church and schools, of which Messrs. W. J. Morley and Son, of Bradford, are the architects, was opened recently. The building is situated in Yarm-road, is of stone, with tower and spire, and has tracery windows filled with leaded lights. The accommodation provided is for 660 persons, 358 on the ground floor and 280 in the gallery, which occupies three sides of the church. The interior woodwork of pews and open roof is pitch-pine, the rostrum and communion furniture being of walnut. The building is heated by low-pressure hot water, and is lighted throughout with electricity. The schools in the rear of the premises comprise a large assembly hall with a shallow gallery, an infants' room, a ladies' parlour, and thirteen classrooms. The cost of the buildings is about 7,800*l*.

WESLEYAN CHURCH, LUTTERWORTH.—The memorial-stones have just been laid of a new Wesleyan church at Lutterworth. Mr. A. E. Lambert, Nottingham, is the architect. The contractors are Messrs. T. Barlow and Co., of Nottingham, and Mr. J. Hewins, overseer and clerk of works. The building, with the site, is expected to cost about 3,500*l*., and there will be seating accommodation in the chapel proper for about 250 persons. There will be transepts on either side, a minister's vestry, a schoolroom to accommodate 200 scholars, a large classroom, which can be divided into two, and a classroom adjoining the schoolroom, also kitchen and other necessary buildings. The bricks used are Sileby red sand struck pressed for outside, and Bath stone dressings. The roof will be partially open, relieved with pierced spandrils. The chief entrance will be by an ornamental porch facing the Hinckley-road, and there will be two other entrances at the other end leading to a corridor joining the schoolroom. The heating will be by hot water on the low-pressure system. The structure will reach a height of 43 ft. from the floor, with an inside space of 25 ft. 6 in. from floor to ceiling. An octagon tower will be 62 ft. to the top of lead spire.

SUNDAY SCHOOL, NEAR WHITBY.—The memorial-stones and memorial-bricks were laid recently for the new Sunday school in connexion with the Sleights and Briggswath (near Whitby) Wesleyan Methodist Church. The school and vestry, etc., are being erected at the back of the site upon which a new church is to be erected, and it will be built of brick, relieved with stone dressings, and covered with tiles. The internal dimensions of the school are as follows:—Length, 30 ft., breadth, 19 ft. 6 in. The projected new church, which is to be erected on the site of the old chapel, will be built of stone and covered with slates. In the interior the church is divided by a centre aisle. The woodwork will be of pitch-pine, and the whole of the tracery windows will be filled with leaded lights. The church is estimated to seat nearly 200 people. The total estimated cost of the school and church is 1,175*l*. Mr. A. E. Young, of Whitby, is the architect, and Mr. Robinson, of the same place, is the contractor.

MEMORIAL HALL, LIVERPOOL.—The foundation-stone of the new central hall of the Liverpool Wesleyan Mission, erected as a memorial to the Rev. Charles Garrett, was laid on the 28th ult. The new building has been designed by Messrs. Bradshaw and Gass, architects, of Bolton, and will contain two halls, one to accommodate 2,500 people in full view of the platform, and the other to seat about 750. The latter will be arranged with terraced seats at the back, and will be adaptable for

Sunday school work. There will also be reception and crush halls, classrooms, rooms for social work amongst both sexes, a drill hall, and administration offices. The main approach is to be through a wide vestibule beneath the central tower, and the two others from the Corporation gardens to be laid out on the site of the Unitarian Burial Ground in Mount-pleasant, and from Upper Newington-street. Provision is made in the main hall for an organ. Shops with show-rooms and offices will be placed in the main portion of the Renshaw-street and Upper Newington frontages. The total cost, with furnishings and organ, is estimated at 37,250*l.*

WESLEYAN METHODIST CHURCH, STOCKTON.—On the 29th ult. a new Wesleyan Methodist church was opened in Yarm-road, Stockton. The new church, which is built in the Gothic style, will cost nearly 10,000*l.* The architect is Mr. R. H. Morley, of Bradford.

CHURCH, BRADFORD.—On the 29th ult. the foundation-stone was laid of the new Church of St. Wilfrid, which is in course of erection at Lidget-green, Bradford. The architect of the new building is Mr. Temple Moore, of London. Seating accommodation will be provided for 620 persons. The work is being carried out by Messrs. Thompson and Co., of Peterborough. The cost of the building will be 8,500*l.*, exclusive of the font, pulpit, and reredos.

NEW WESLEYAN CHURCH, BEIGHTON, SHEFFIELD.—The memorial-stone was laid recently of the new Wesleyan church which is being erected at Beighton. It is estimated that the building will cost about 2,300*l.* The architect is Mr. W. C. Jackson, and the contractors Messrs. Lund and Swann, of Eckington.

NEW COLLEGE, LETTERKENNY.—The foundation-stone of the new College of St. Eunan at Letterkenny was laid a short time ago by the Bishop of Raphoe. The building will be of Celtic design, and amongst the prominent features are four round towers projecting from the exterior angles of the quadrangular building, and the inner courtyard, surrounded by an open cloister and corridor, with stone circular columns and circular-headed traceried arcading. The elevations are broken by stone turrets and irregular embattlements along the line of the eaves, with running mouldings, broken at intervals by projecting Celtic block carvings and sculptures. The contract for the work has been entrusted to Messrs. Henry Laverty and Son, Belfast, and the architect is Mr. Thomas F. M'Namara, of the firm of Messrs. Hague and M'Namara, of Dublin.

PRIMITIVE METHODIST CHURCH, EAST FINCHLEY.—The foundation-stones of the new Primitive Methodist church, which is now being built in High-road, East Finchley, were laid recently. The design of the building is Gothic, the front elevation having Bath stone facings and a traceried mullioned window in a gable end, while a porch and vestibule, projecting from the main wall, occupy the lower portion of the design. The interior has an open pitch-pine roof, plastered walls, and an ornamental rostrum of bronze-green colour and varnished, which fills up a semi-octagonal recess at the end of the building, while vestries, lavatories, and scullery are also provided. Accommodation will be afforded for 300 persons. The architects were Messrs. Smee, Mence, and Houchin, the builders being Messrs. T. D. Steed and Sons.

NEW LIBRARIES FOR LEWISHAM.—The Libraries Committee of Lewisham Borough Council reported on Tuesday that, upon the completion of the purchase of the site for the Brockley branch library, they invited designs from fifteen local architects for the erection of the building at a cost not to exceed a total of 4,500*l.* Thirteen of the fifteen selected architects sent in designs, and that which was numbered nine at the time of receipt had been unanimously selected, subject to a *bonâ-fide* tender being received within the specified limit from a substantial contractor. The 4,500*l.* is to include fixtures, fittings, and architect's and quantity surveyor's fees. With regard to the proposed erection of a public library at Hither Green, the Committee had decided to apply to the London County Council to convey their interest in Mountsfield so that the building should be adapted for a library. If that could not be done the site could be used for a new library as soon as funds are available.

CHURCH, BROADHEATH, WORCESTER.—The newly-erected Christ Church, Broadheath, was consecrated by the Bishop of Worcester recently. The new church is situate near the old chapel of ease and the schools, near the main road. It comprises chancel, nave, ambulatory, with arches between it and the nave (with the view of future extension by adding a north aisle), porch, and a tower resting upon the nave level, choir, and organ chamber in a gallery, which is approached by a staircase from the porch. Above the gallery are the clock and bell chambers, reached by turret stairs from the south-east corner of the tower. The church is built throughout of red stone from Lord Dudley's quarries at Holt. The font and cover were carved by Mr. Haughton, sculptor, of Worcester, and, together with the other furniture, were designed by the architect; the gallery front and altar rails by Messrs. Collins and Godfrey, Tewkesbury; and the remainder of the oak furniture by Messrs. Braithwaite, of Worcester. The builders were Messrs. Collins and Godfrey, Tewkesbury; the foreman of works was Mr. Eb. Smith, Bedford. Mr. C. E. Ford Whitcombe, of Winchester House, E.C., and of Newbury, Broadheath, was the architect.

TEMPORARY STRUCTURE, LUTON.—The building which was erected at Luton for the purpose of providing accommodation for the recent political meeting held there was designed by Messrs. Martin and Martin, architects, of Birmingham. The total interior area was 200 ft. by 135 ft., and the roof was constructed by Messrs. McTear and Co., Belfast.

A YEAR'S BUILDING IN GLASGOW.—Lord Inverclyde, at Glasgow Dean of Guild Court, made, on the 29th ult., the annual statement as to building operations in Glasgow. The total valuations of the linings granted during the year, he said, amounted to 2,118,800*l.*, or not very far below the valuations of the previous year, which was the second highest on record. When the figures came to be analysed, however, it was found that there was really a considerable decrease in building operations in Glasgow, and that exceptional causes had kept up the total valuations. In regard to houses there had been a very marked falling off in the applications for linings throughout the city, both in regard to houses with a small number of apartments and houses with six apartments and upwards, showing that the supply of the last few years had more than met the demand for increased dwelling accommodation. The decreased valuation in this respect compared with the previous year was no less than nearly 800,000*l.* This falling off, however, had been met in the increase in valuations of linings applied for in connexion with public buildings, warehouses, workshops, and alterations and additions to existing buildings, while a few special linings for works of large value had made up for the decrease in other directions. The linings granted for new streets were just half of what they were in the previous year. In view of the apparent lull in the building operations within the City of Glasgow at the present time, it seemed a suitable occasion to look back at the valuations of the linings granted by the Court during the last quarter of a century. For the purpose of this retrospect he would go back twenty-five years, to 1879-1880, and dividing them into five quinquennial periods down to the present time, he found that the linings granted for each five years amounted as follows:—1879-84, 2,333,708*l.*; 1884-9, 2,244,125*l.*; 1889-94, 4,542,625*l.*; 1894-9, 8,747,580*l.*; 1899-1904, 10,388,993*l.* In considering these figures, however, two points must be borne in mind. In the first place, in the middle quinquennial period the city boundaries were extended—in 1891-2. In the second place, allowance must be made for the valuation of old buildings removed to be replaced by new ones. In the year 1879, to which he had gone back, the population of Glasgow was 500,000, while to-day it was over 780,000.

STAINED GLASS AND DECORATION.

NEW WINDOW, EALING.—A large south transept window has just been erected in St. Saviour's Church, Ealing. It consists of three lights and a vesica-shaped tracery opening over centre, representing early scenes of the Incarnation. The key-note is struck by the angel in the tracery, who holds the text "The Word was Made Flesh." Each light is divided into compartments surrounded by tabernacle work of lace-like appearance, and white and silvery in tone, thus isolating each subject and forming a suitable framing. The subjects treated are "The Annunciation," "The Visitation," "The Nativity," and "The Adoration of the Angels, Shepherds, and Magi." The subjects are treated conventionally, not as pictures, so that the window retains its character as decorative work in glass. The work was designed and executed by Messrs. Percy Bacon and Brothers, of London, under the supervision of Mr. G. H. Fellowes-Prynne, consulting architect.

SANITARY AND ENGINEERING NEWS

THE DRAINAGE OF SWANSEA.—A Board of Trade inquiry was held at the Town Hall, Swansea, recently, respecting the proposed sewerage outlet for the western district of Swansea. Mr. William Matthews, C.M.G., M.Inst.C.E., assisted by Mr. Fryer (of the Agricultural and Fisheries Board), represented the Board of Trade. Mr. B. Francis-Williams, K.C. (instructed by the town clerk), appeared to support the Corporation scheme, which is for an outlet at Brynmill. Mr. B. Francis-Williams said there were at present five outfall sewers, and the projected one would serve a population of about 7,000 at Brynmill. The Local Government Board in 1890 sanctioned the scheme, but pointed out that the consent of the Board of Trade would have to be obtained, and this consent was subsequently refused, owing to the apprehended pollution of the oyster beds at the Mumbles. It would be shown that the danger was an imaginary one, for the sewage matter would be dealt with in septic tanks, and would be discharged only when the tide was going seaward. Mr. Wyrill, Borough Engineer, said the Council, after full consideration of various schemes, were firmly of opinion that the Brynmill scheme, combined with the septic tank accommodation for 212,000 gallons of sewage matter, was the best scheme.—There is considerable opposition to the scheme, and Mr. Wyrill was cross-examined at length.

FOREIGN.

GERMANY.—The town of Bremen has opened an international competition for the most artistic architectural designs for a block of houses to be erected in the Kaiser Wilhelmsplatz, facing the town hall. Prizes of 5,000 marks (about 250*l.*), 3,000 marks (about 150*l.*), and 2,000 marks (about 100*l.*) are offered for the best designs.——The United States Consul at Mainz reports that a Hamburg firm have patented a process for manufacturing an artificial building stone from infusorial earth, which they call "Guhrolit." This stone is very light, is fireproof, withstands the influence of most chemicals, and can be easily sawed, nailed, and bored.

MISCELLANEOUS.

LINCOLN BUILDING BY-LAWS.—A meeting of the Lincoln City Council was held on the 4th inst., when Mr. Bainbridge called attention to the passing by the Building Committee of plans with outer walls of only 4½ in. Mr. Mills maintained that, being in a passage, the walls in question were not outer walls. A long discussion ensued, the labour members of the Council favouring the 4½-in. walls on the ground that it would mean more rent for the working men if 9-in. walls were insisted on. The Mayor said the building by-laws of the City were very antique, and very much easier than any new by-laws could possibly be. He could not help expressing the opinion that it would be a great mistake to make them easier. For working men to believe their good interests were served by putting up buildings which could not stand as long as they ought to stand, seemed to him very much like encouraging the erection of buildings of the class which they were trying to abolish, and which he hoped would soon be swept away. Alderman E. Pratt moved that the plans in question be referred back to the Committee, and this was carried by fourteen votes to seven.—*Yorkshire Post.*

FINLAND TIMBER.—It appears from official statistics that in the year 1903 there were exported from the Grand Duchy of Finland deals to the value of 780,840*l.*, battens to the value of 1,334,600*l.*, and boards to the value of 1,665,880*l.* It has long been known that "Enare Lapmark" possesses great wealth in its immense forests. They have stood untouched for centuries up to the present without any careful supervision, but, at the same time, free from the wood-cutter's axe. In this district there was only one forest inspector and a few foresters, whose duty it was merely to prevent the illegal felling of trees, and to protect them against fire, and up to the present it has been almost a necessity to leave these valuable forests untouched, on account of their remoteness and want of suitable rivers to float the timber southwards. It has now been decided to commence a rational exploitation of these vast forests, containing about 10,000,000 of large trees. On account of the slow growth in this northerly region, an average age for full-grown trees has been calculated at 250 years, with an average height of about 56 English ft. About 100,000 trees are now to be sold by public auction as a trial, and the timber will have to be floated through the Patsjoki Lake, on the Finnish Frontier, to Varanger Fjord in Norway. It can also be floated through several Finnish lakes and rivers to the Murmar coast, on Russian territory. This experiment by the Finnish Government to open the forests in the "High North" will certainly be of great interest to saw-mill owners. Swedish and Norwegian companies

are already making inquiries with regard to the time of sale, yet it is improbable that Finnish speculators will avail themselves of this fact, as no Finnish firm at present carries on any timber export from the Arctic Sea, though Swedish, Norwegian and Russian exporters have great experience in floating and exporting timber from that northerly region. At a meeting of saw-mill owners, the chairman said he had received accounts from eighty-six mills, with a production of over 300,000 standards. The quantity remaining unshipped, although sold, was 90,579 standards, against 91,331 standards in 1902. An agreement has been arrived at amongst the producers that next winter there shall be a further reduction of 10 per cent. in the number of trees to be felled.

APPOINTMENT.—The question of appointing an architect for carrying out the Leeds Workhouse Extension scheme was discussed by the Leeds Guardians on the 21st ult. Mr. Richardson had given notice of a motion on the subject, but the Chairman (Mr. Arthur Willey) raised a direct issue by proposing the appointment of Mr. Thomas Winn. The resolution having been seconded, Mr. Richardson moved a direct negative to the Chairman's proposition, but afterwards varied his amendment to one adjourning the appointment for a month. This was seconded by the Rev. Father Corr, but it was defeated by nineteen votes to thirteen. On the substantive proposition that Mr. Winn be appointed, the voting was evenly divided—sixteen for and sixteen against—and the Chairman gave his casting vote for the motion. Mr. Winn was therefore appointed.

SELF-WINDING ELECTRIC CLOCK.—We had an opportunity last week of inspecting a self-winding clock, which is being put on the market by The Self-Winding Clock Syndicate, of Audrey House, Ely-place, London. A self-winding clock, to be of any real use, must be a very accurate time-keeper, otherwise there is practically nothing gained, as constant attention will be required for the purpose of regulating the hands. The accuracy of such a clock must be of a far higher order than those in everyday use. An inspection, however, of the clocks of this type which we were shown has convinced us that they can be made so that they keep time much more accurately than ordinary clocks. The winding is done electrically every five or six minutes, the necessary power being obtained from two small dry cells. The main spring is of the helical type, and is distinctly novel. Its elasticity will alter much more gradually than the elasticity of the ordinary flat spiral spring. Its extension is very slight compared with its length, and thus the "elastic fatigue" will be infinitesimal. The rate of the clock can be adjusted very accurately by simply turning a screw. We see no reason why the primary batteries should not be able to keep it going for several years. The novel points in the design of this clock should make it popular, especially if it prove to be an accurate time-keeper.

DOUGLAS'S PATENT SIPHON CISTERN.—The illustration shows the section of a siphon cistern patented by Mr. J. P. Douglas (Workington, Cumberland). The water is admitted by a ball-tap arrangement in the usual manner, and, in filling, the cistern imprisons and compresses to a certain extent the air in the air bell D. The imprisoned air prevents the water from rising to the level of the siphon inlet contained in the air bell. To empty the cistern the air escape valve or push is pressed. This releases the air from the air chamber, and the atmospheric pressure on the water in the cistern forces the water up to the level of the siphon inlet enclosed in the air bell. The water rushes down the outlet pipe, and the suction so caused brings the main siphon B into play. A double siphonic action is thus secured, and the consequent increased pressure, it is claimed, gives a powerful and complete flush. The further advantages claimed for the cistern are:—(1) It cannot overflow; (2) the absence of the chain pull with its heavy weighted lever, and consequent wear and tear, reduces the cost of the maintenance and repairs to a minimum; (3) the parts, being stationary, can all be made of non-corrosive metal; (4) the cistern is noiseless in action; (5) the air escape pipe, being of small diameter, can be let into the wall or encased in wood. We may add that we are not responsible for the mis-spelling, "synhon," in the references, which form part of the block furnished to us by the patentee.

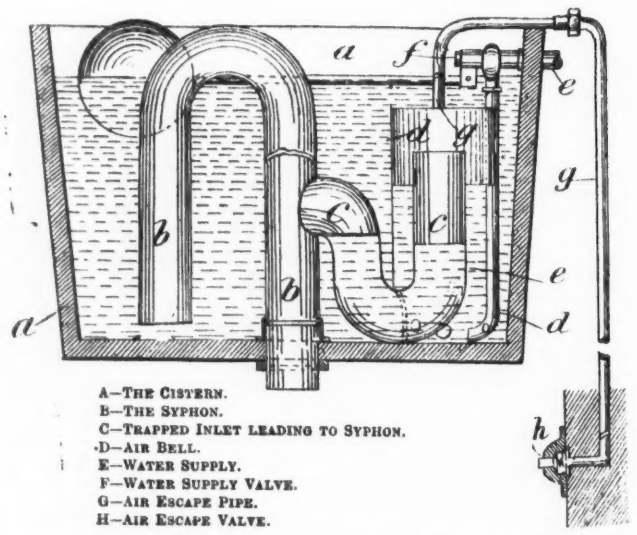
OPEN SPACES.—A body, consisting of nine conservators, has been appointed to frame a code of by-laws for the preservation of the Oxshott woods and common, in the parish of Stoke D'Abernon, Surrey, which are being gradually despoiled of their natural beauties at the hands of "trippers," holiday-makers, and others. The land, which formerly belonged to Waverley Abbey, appertains to the manor of Claremont, and the Duchess of Albany will be represented upon the new board by her Comptroller, Sir Robert Collins, K.C.B., whilst Mr. John H. Clutton will act in a similar capacity on behalf of the Woods and Forest Commissioners. The Lambeth Borough Council have expressed their willingness to contribute 2,000*l.* towards the purchase of the 6 acres of meadow land in Trinity-road, by the south side of Brockwell Park, when the remaining sum of 10,000*l.* shall have been raised. The proposed addition would, so far as is now possible, preserve all the land which forms a natural boundary of the park and prevent that side of it from being blocked in with rows of small houses: the owner, it is stated, received an offer of 15,000*l.* for the land for building purposes, but is willing to meet the promoters' object by taking 12,000*l.* In response to the appeal of Miss Octavia Hill and Canon Rawnsley for the acquisition, at a price of 12,000*l.*, of 700 acres on the shore of Ullswater Lake, with Gowbarrow Park and Fell, and the Aira Force, or cascade, a sum of 100*l.* is offered by "Stroller," provided that nineteen similar donations are forthcoming. Of the nineteen individual donations fifteen are already promised; amongst other contributors are Mrs. Charles Buxton (100*l.*), and Mr. Alfred Waterhouse, R.A. (20*l.*). The property is offered to the National Trust by Mr. Henry Howard, of Greystoke Castle.

THE LABOUR MARKET IN THE COLONIES.—The October circulars of the Emigrants' Information Office state that in *Canada* the supply of mechanics and general labourers is quite sufficient, and the emigration of such persons is not recommended, especially as the winter season is coming on. In *Australia* there is a demand for experienced farm labourers in Western Australia, Queensland, and parts of Victoria, but there is little demand anywhere for more miners, mechanics, or general labourers. Late reports from New South Wales state that, owing to the severity of the late drought, and the numbers of the unemployed, no one without capital should emigrate to New South Wales at the present time. In *New Zealand* employment has been good, and skilled mechanics should be able to obtain work without waiting long. In *Cape Colony* there is now no opening for mechanics in the building or other trades, and all persons (especially general labourers) are warned against going at the present time, unless they go out to situations engaged for them, or have means of their own sufficient to keep them for some months. But in any case there is no opening for indifferent workmen. The building trade in *Natal* has been fairly busy, but labour is plentiful, and large numbers of unskilled workers and indifferent workmen are unable to obtain employment. Emigrants, therefore, other than those obtaining nominated passages, are warned against going to Natal at the present time on the chance of work. No one can enter the *Transvaal* without a permit, and persons are warned against going there at the present time in search of work. There is no improvement in trade. In the *Orange River Colony* there is very little demand for skilled mechanics, and none at all for second-class hands or general labourers. It is officially notified that, in view of the large number of candidates already registered, no further applications for appointments under the Government of the Orange River Colony can be entertained.

SCHOOL OF ART WOODCARVING.—The School of Art Woodcarving, South Kensington, which now occupies rooms on the top floor of the new building of the Royal School of Art Needlework in Exhibition-road, has been reopened after the usual summer vacation, and we are requested to state that some of the free studentships maintained by means of funds granted to the school by the London County Council are vacant. The day classes of the school are held from 10 to 1 and 2 to 5 on five days of the week, and from 10 to 1 on Saturdays. The evening class meets on three evenings a week, and on Saturday afternoons. Forms of application for the free studentships and any further particulars relating to the school may be obtained from the manager.

ENGLISH CRAFTS AT THE ST. LOUIS EXHIBITION.—We have received a catalogue and a pamphlet of photographs of work done by the "Craft School" (an Evening Art and Technical School) in Globe-road, Bethnal Green, which has been contributed to the St. Louis Exhibition. Judging from the photographs, the work done, especially in woodcarving and repoussé metal, appears to be very good, and a credit to the school. The prospectus of the school states that the object of their teaching is educational; to develop the creative faculty of the pupil and his power of appreciation. The crafts are taught, not as separate trades, but as various modes of art expression; and the same boy always makes the design and carves it out in the appropriate material. All this seems very satisfactory.

ARCHÆOLOGICAL DISCOVERIES.—During excavations by Corporation workmen at Newcastle-under-Lyme, the foundation of part of the castle built about 1180 was discovered. A corner wall of plinth courses has been laid bare to the extent of 10 ft. or 12 ft. each way, and to a depth of 8 ft. The wall is of local red sandstone. The excavations are to be continued and the walls traced.



A—THE CISTERN.
B—THE SYPHON.
C—TRAPPED INLET LEADING TO SYPHON.
D—AIR BELL.
E—WATER SUPPLY.
F—WATER SUPPLY VALVE.
G—AIR ESCAPE PIPE.
H—AIR ESCAPE VALVE.

Douglas's Patent Siphon Cistern. Section.

Legal.

AN ARCHITECT'S CLAIM FOR PROFESSIONAL SERVICES.

AT the Clerkenwell County Court, on the 29th ult., Mr. E. A. Agutter, architect, sued Messrs. Levy and Co. for 25*l.* due in respect of professional services. Mr. Walter Stewart appeared for the plaintiff, Mr. Green for defendants. The case was heard before a jury.

The plaintiff's claim was for services rendered in connexion with repairs at the defendants' premises, 2, Pitfield-street, Hoxton, for which a builder's estimate of 160*l.* was given. Subsequently further work was required, ultimately involving an expenditure of 530*l.* The work was then abandoned, and on plaintiff applying for his fees he received a lawyer's letter in which the defendants denied having given any instructions for the plans. In the course of the evidence plaintiff stated that he could never get written instructions from the defendants, who said that was not their way of doing business.

Mr. Lovegrove, District Surveyor, gave evidence in support of the plaintiff's claim, as in accordance with professional custom.

The solicitor to the defendants was called, and produced a letter written to him by defendants in reference to rebuilding the back premises. In this they said they had instructed plaintiff to prepare plans.

Mr. Stewart: Then I need ask you nothing else.

Mr. Green consulted with his clients, with the result that twenty guineas and costs was offered and accepted, and the jury withdrawn.

PATENTS OF THE WEEK.

APPLICATIONS PUBLISHED.*

17,135 of 1903.—A. TIXIER and L. RAMBAUD: *Process for the Manufacture of Varnishes by the Direct Solution of Gums without Previous Fusion.*

A process of manufacture of a solvent of gums, consisting in causing an acid to act on the spirit of turpentine, on agitation, so as to produce terpineol directly, or to produce crystalline terpine which is afterwards transformed into terpineol by the action of dilute sulphuric acid, spirit or turpentine, benzine, alcohol, or similar substance being afterwards added to the terpineol obtained in either one case or the other.

19,313 of 1903.—W. FAIRWEATHER (G. S. Noble): *Mixing Machines for Concrete and Other Materials.*

A concrete mixing machine, comprising a cylindrical drum having a lateral feed and discharge opening therein, means for revolving said drum, and means for performing the mixing, said means comprising a central shaft, arms on said shaft, and mixing blades on said arms adapted to scrape the material from the sides of said drum and discharge it toward the centre thereof.

22,257 of 1903.—C. J. HART and W. FINCH. *Closing Apparatus for Swinging and other Doors.*

This invention has reference to closing apparatus for swinging and other doors, the object being to cause such doors to come back always when swung to a definite central or closed position without shock or jar. A case or box is formed, preferably circular and of a suitable depth, and to the inside bottom part is fixed a race plate, or an inclined circular piece, with a race for balls, rollers, or the like, the same being kept in the race by a plate, or other suitable means. The pivot or spindle which fits the bottom of the door, and upon which the same turns, passes through the cover of the case or box, and through a cam-like piece corresponding to the bottom inclined circular piece, the cam turning on two or more of the balls at a time, so that when the door is being turned from its central or closed position for opening, the balls are moved along by the cam turning with the pivot, the end of which turns in the bottom inclined circular piece.

22,319 of 1903.—T. W. LOVATT and C. PURSER: *Novel Wood-working Mechanism.*

Wood-working mechanism, which comprises a swinging frame or suspended arms adapted to carry at its lower end a tool or tools which, as the frame or arm is moved upon its axis of suspension, may be utilised in cutting into and along the surface of a piece of wood remaining in a stationary position below the frame or arm.

22,516 of 1903.—P. P. ORUM: *Fastenings for Windows, Doors, Boxes, and other Articles.*

A safety lock for windows, doors, boxes, and the like, comprising a locking arm engaging a trap and capable of turning around two axes perpendicular to each other, said arm being hinged to a pivot rotatively attached to one of the window leaves and having a bend, a plate having a U-shaped cavity that is open on its bottom, the bend of the locking arm being adapted to engage said groove when turned round at 180 deg.

23,211 of 1903.—A. ROBERTS: *A Construction of Portable Folding Table, or the like.*

A folding table, or the like, consisting of a top or cover of some soft material which can be wrapped or folded up, of cross pieces or arms also capable of being folded up or taken to pieces, and of legs which can be disconnected and folded up or taken to pieces so that the whole can be packed in a small compass.

23,878 of 1903.—E. SUMMERFIELD: *A Wedge Fitting Adapted for Fixing Doors and Windows, and other similar purposes.*

This invention relates to a wedge fitting specially adapted, when in use, for preventing the opening of a door or window, and for fixing a door or window in a more or less open position. A short, narrow piece of metal-plate is taken—say, for example, 4 in. in length by 1 in. in breadth, or of larger or smaller relative dimensions—one end of same is thinned out to a fine edge, and the other end turned down, the turned down part being about one-fourth of the entire length of the plate, thus, when the fitting so formed is mounted so that it takes its bearings on the thinned-out end and the turned-down end aforesaid it will have the appearance and be in the form of a wedge.

*All these applications are in the stage in which opposition to the grant of Patents upon them can be made.

24,043 of 1903.—A. J. SMITH and J. HUMPHERY: *Means for Securing the Doors of Lift Wells.*

This consists in the combination with a cam on the lift of means for moving the cam horizontally, latches projecting up through the floors to hold the doors of the well, and means operated by the cam to withdraw the latches.

25,335 of 1903.—E. CROWE: *Roller Bearing Drawers for Cabinets.*

A drawer fitted with extension slides and comprising a combination of anti-friction rollers and rails or channels, such rails or channels having closed ends, forming a closed roller path for the double purpose of preventing displacement of the rollers and forming a stop to the drawer.

11,258 of 1904.—E. STOFFLER: *Fire-proof Quartz Bricks or Blocks.*

The manufacture of fire-proof quartz bricks by steaming, and subsequently burning the moulded bricks, consisting in the employment of magnesia as a binding material.

16,531 of 1904.—D. J. MCKENZIE: *Fire Arches for Furnaces.*

A fire arch for furnaces, consisting in the combination of a cross beam arranged transversely across the furnace, a plurality of inwardly-extending brackets secured thereto, and extending inwardly therefrom, a plurality of longitudinally-disposed bars detachably secured one to each of said inwardly-extending brackets, and fire-brick tiles detachably secured to each of such longitudinal beams.

16,808 of 1904.—R. NICHOLSON: *A Window Furniture Bracket.*

A combined roller blind and curtain pole support, comprising a lower projecting part for receiving the blind roller end or spindle, fastening lugs adjacent to said part, and the curtain pole carrying part, projecting up above the lower projecting part and beyond same, and having the carrying part at its extremity.

16,948 of 1904.—J. E. GAGNON: *Window Scaffolds.*

A device, comprising a seat, hook arms upon said seat adapted to engage the inner portion of a window sill to support the front of said seat, and means for supporting the rear of said seat, said means comprising a pair of adjustably-connected members adjustably secured upon said side of said seat and adapted to engage the rear portion of said window sill.

17,105 of 1904.—N. BARRETT: *Machine for Dovetailing Window Sashes.*

A sash dovetailing machine, consisting of a vertical adjustable circular saw revolving in a horizontal plane, in combination with a vertically adjustable table, coiled pressure springs, a vertical horizontal adjustable face carrying a metal protecting plate, a tapering liner, and a movable angle plate.

19,447 of 1903.—J. S. OWENS: *Apparatus for Mixing Concrete and the like.*

Apparatus for making concrete and the like, consisting in the application of a series of equi-distant bars or straps which pass down the middle of the shoot so as to form sinuous or zigzag-wise disposed surfaces, and are so fixed or attached as to be able to feather or vibrate, in combination with sloping baffle plates applied alternately to opposite sides of the shoot.

23,747 of 1903.—R. H. REEVES: *Sewer Manholes or Shafts.*

This relates to sewer manholes or shafts, and consists in constructing a shield or contracting appliance from segments and placing a ring on the top of such segments to keep them together, the whole being situate on corbels or projections in the manhole or shaft.

16,987 of 1904.—E. RYSER: *A Building Stone.*

A building stone, characterised by a main piece having the form of a four-sided prism, one face of which has a headpiece also having the form of a four-sided prism, and is so disposed that it projects with at least two lateral surfaces beyond the corresponding lateral surfaces of the main piece whilst it stands back one lateral surface in relation to the corresponding lateral surface of the main piece.

16,999 of 1904.—A. WOODHOUSE: *Gullies.*

A gully, consisting in the arrangement wherein the grating is held upon an internal shoulder in the frame, and is locked in position by a taper tongue upon the grating, which engages an undercut recess in the frame, and a gravity catch.

17,045 of 1904.—A. HENDEL: *Ventilating Apparatus.*

A ventilating apparatus or device characterised by this—namely, that the water serving for flushing the closet before entering the flushing tank rises in one or more tubes, so that, by an atomising nozzle or nozzles, opening into a ventilating conduit, suction is produced, and, if two valve-fitted tubes be used, such suction may be produced in one or the other direction at will, while, at the same time, the atomised water passes from the lowest point of the ventilating conduit into the flushing tank.

17,066 of 1904.—G. B. GODSON: *A Composition for Effecting the Adherence of Tiles and the like to Walls.*

A composition for attaching opal glass tiles and the like to walls, consisting of about 40 per cent. of dextrine, 40 per cent. of powdered alum, and 20 per cent. of adamant cement, to which is added a sufficient quantity of gum dissolved in water, the composition being spread upon the back of opal glass tiles, and small pebbles, grit, fragments of coke breeze, or granite chips, being scattered upon its surface.

SOME RECENT SALES OF PROPERTY:

ESTATE EXCHANGE REPORT.

September 23.—By HATCH, WATERMAN, & SON (at Tenterden).

Tenterden, Kent.—"Ivy-ct." and 8 a. 2 r. 19 p., f.	£1,580
Woodchurch, Kent.—Moiety of pasture land, 40 a. 0 r. 11 p., f.	480
Stone, Kent.—Moiety of pasture land, 42 a. 3 r. 3 p., f.	325

By THOMAS & BETTRIDGE (at Tenbury).

Tenbury, Worcestershire.—"The Berrington Estate," 553 a. 1 r. 19 p., f. (in lots)]	14,100

September 26.—By B. BAILEY & CO.

Willesden.—182, High-rd. (s.), u.t. 75¼ yrs., g.r. 6*l.* 6s., y.r. 50*l.*	460
Neasden-la., "Cranfield," f., y.r. 38*l.*	550

By FRANCIS DOD & CO.

Kingsland.—28, John Campbell-rd. (s.), u.t. 63 yrs., g.r. 8*l.*, y.r. 45*l.*	450
20, John Campbell-rd., u.t. 63 yrs., g.r. 6*l.*, y.r. 34*l.*	350
Stoke Newington.—6, 8, 13, 15, and 17, Sydner-rd., u.t. 66 yrs., g.r. 29*l.* 10s., y.r. 170*l.*	1,760
Woodford.—21, 23, 25, and 27, Pelham-rd., f., y.r. 128*l.*	1,610

By KEMSLEYS'.

Snaresbrook.—Tavistock-rd., freehold building site	460
Mitcham.—Spencer-rd., freehold building plot	300
Romford.—Hare-st., "Repton Cottage," f., p.	520
Hare-st., three blocks of freehold building land	2,070

September 27.—By FREDERICK WARMAN.

Islington.—113, Englefield-rd., u.t. 36½ yrs., g.r. 7*l.* 7s., e.r. 70*l.*	490
Harringay.—21, Duckett-rd., u.t. 85 yrs., g.r. 7*l.* 7s., y.r. 40*l.*	390

By WESTON & SONS.

Brixton.—23, Gateley-rd., u.t. 67 yrs., g.r. 7*l.* 7s., e.r. 45*l.*	410
81, Wiltshire-rd., u.t. 60 yrs., g.r. 9*l.*, e.r. 60*l.*	460

By M. DE ROME & SON (at Windermere).

Hawkshead, Lancs.—Esthwaite Lodge Estate, 314 a. 1 r. 6 p., f.	8,250
The Home Farm, 145 a. 3 r. 24 p., f.	2,600
Waterside Farm, 37 a. 1 r. 26 p., f.	1,750

September 28.—By DANN & LUCAS.

North Cray, Kent.—Cottage and fruit plantation, 3 a. 0 r. 4 p., f., p.	500
Fruit plantation, 2 a. 3 r. 0 p., f., p.	400
"Hammond's" fruit plantation, four cottages, and 1 a. 2 r. 14 p., f., p.	650
"Rum Skeet Hill" enclosure, 2 a. 3 r. 34 p., f., p.	300
Wilmington, Kent.—Two cottages, plantation, and 1 a. 2 r. 9 p., f., p.	290
Puddledock, five freehold cottages, p.	320
"Lumber Lands" Enclosures, 22 a. 0 r. 36 p. f., p.	1,700
"Ridley's Croft" Fruit Plantation, 5 a. 2 r. 34 p., f., p.	580

By PHILIP STOCK.

Brixton.—45, Geneva-rd., u.t. 62 yrs., g.r. 6*l.*, e.r. 38*l.*	305

By JOSEPH HODGKINSON (at Matlock Green).

Snitterton, Derby.—"Lee Wood Farm," 152 a. 1 r. 9 p., f.	2,900

By T. BANNISTER & Co. (at Hayward's Heath).

Staplefield, Sussex.—"Tyes-pl." and 164 a. 3 r. 9 p., f.	5,500
"Rose Cottage" and 2 a. 1 r. 4 p., f.	400
"Herring Pond" and "Dorcas Cottages" (four), also "Vine Cottage," f.	635
Enclosure of land, 8 a. 1 r. 37 p., f.	230
Tithe rent charges of 32*l.* 10s.	450
Tithe rent charges of 48*l.* 13s.	750

September 29.—By C. RAWLEY CROSS & Co.

Acton.—Allison-rd., etc., two plots of building land, f.	313

By FISHER, STANHOPE, & DRAKE.

Clapton.—41, Nightingale-rd., u.t. 55 yrs., g.r. 11*l.*, e.r. 45*l.*	350

By STIMSON & SONS.

Peckham.—94 and 96, Lugard-rd., u.t. 71¼ yrs., g.r. 9*l.*, p.	610
Chistiana Cottages, f.g.r. 9*l.*, reversion in 65¾ yrs.	240
Herne Hill.—Hamilton-rd., f.g.r. 6*l.*, reversion in 59½ yrs.	175
Tooting.—100, Upper Tooting-rd., u.t. 77 yrs., g.r. 26*l.*, p.	900
Upton Park.—218 and 220, Green-st. (s.), u.t. 74 yrs., g.r. 12*l.*, y.r. and e.r. 100*l.*	750
Plaistow.—13 to 21, Shaftesbury-av., u.t. 72 yrs., g.r. 45*l.*, e.r. 208*l.*	220

By LONDON & PARIS EXCHANGE.

Smithfield.—22, Cloth Fair and 1, Red Lion Passage (s.), area 1,038 ft., y.r. 117*l.* £1,400

By SLADE & CHURCH.

Croydon.—158, 190, and 192, Brighton-rd, f., y.r. 107*l.* 1,450

September 30.—By CARTWRIGHT & ETCHES.

Lambeth.—162 to 168 (even), Westminster Bridge-rd. ("Piggott's Hotel"), beneficial leases for 10½ and 12½ yrs., y.r. 275*l.* (as a going concern) 580

By C. SPARROW & SON.

Finchley.—Woodside Park-rd., "Lindisfarne," u.t. 93 yrs., g.r. 9*l.*, e.r. 60*l.* 500

Contractions used in these lists.—F.g.r. for freehold ground-rent; l.g.r. for leasehold ground-rent; i.g.r. for improved ground-rent; g.r. for ground-rent; r. for rent; f. for freehold: c. for copyhold; l. for leasehold; p. for possession; e.r. for estimated rental; w.r. for weekly rental; q.r. for quarterly rental; y.r. for yearly rental; u.t. for unexpired term; p.a. for per annum; yrs. for years; la. for lane; st. for street; rd. for road; sq. for square; pl. for place; ter. for terrace; cres. for crescent; av. for avenue; gdns. for gardens; yd. for yard; gr. for grove; b.h. for beerhouse; p.h. for public-house; o. for offices; s. for shops; ct. for court.

MEETINGS.

MONDAY, OCTOBER 10.

Institute of Sanitary Engineers, Ltd.—Organising Committee, 3 p.m. Examination and Literary Committee, 5 p.m.

Liverpool Architectural Society (Incorporated).—Opening Address by the President, Mr. Philip C. Thicknesse. 6 p.m.

TUESDAY, OCTOBER 11.

Architectural Association Camera and Cycling Club.—Messrs. S. B. Bolas and D. M. Mackenzie on "Westminster Abbey." 8 p.m.

Institute of Sanitary Engineers, Ltd. (Lectures in Practical Sanitary Science).—Mr. N. W. Hoskins on "Hydraulics and Hydrostatics." 7 p.m.

FRIDAY, OCTOBER 14.

Architectura Association. — Mr. E. Dockree on "Photography as Applied to Architecture"—Illustrated with Lantern Slides. 7.30 p.m.

SATURDAY, OCTOBER 15.

Institute of Sanitary Engineers, Ltd.—Visit to the Liernur System of Sewerage at Stanstead.

TERMS OF SUBSCRIPTION.

"THE BUILDER" (Published Weekly) is supplied DIRECT from the Office to residents in any part of the United Kingdom at the rate of 19s. per annum (52 numbers) PREPAID. To all parts of Europe, America, Australia, New Zealand, India, China, Ceylon, &c., 26s. per annum. Remittances (payable to J. MORGAN) should be addressed to the Publisher of "THE BUILDER," Catherine-street, W.C.

SUBSCRIBERS in LONDON and the SUBURBS, by prepaying at the Publishing Office 19s. per annum (52 numbers) or 4s. 9d. per quarter (13 numbers), can ensure receiving "The Builder" by *Friday Morning's Post.*

PRICES CURRENT OF MATERIALS.

*** Our aim in this list is to give, as far as possible, the *average* prices of materials, not necessarily the lowest. Quality and quantity obviously affect prices—a fact which should be remembered by those who make use of this information.

BRICKS, &c.

	£ s. d.	
Hard Stocks.	1 15 0	per 1000 alongside, in river.
Rough Stocks and Grizzles	1 13 0	" " "
Facing Stocks ...	2 12 0	" " "
Shippers	2 10 0	" " "
Flettons	1 10 0	" at railway depôt.
Red Wire Cuts ...	1 14 0	" " "
Best Fareham Red	3 12 0	" " "
Best Red Pressed Ruabon Facing	5 0 0	" " "
Best Blue Pressed Staffordshire ...	4 4 0	" " "
Do. Bullnose	4 10 0	" " "
Best Stourbridge Fire Bricks.....	4 8 0	" " "
GLAZED BRICKS.		
Best White and Ivory Glazed Stretchers	13 0 0	" " "
Headers	12 0 0	" " "
Quoins, Bullnose, and Flats.....	17 0 0	" " "
Double Stretchers	19 0 0	" " "
Double Headers...	16 0 0	" " "
One Side and two Ends	19 0 0	" " "
Two Sides and one End	20 0 0	" " "
Splays, Chamferred, Squints	20 0 0	" " "
Best Dipped Salt Glazed Stretchers, and Header	12 0 0	" " "
Quoins, Bullnose, and Flats.....	14 0 0	" " "
Double Stretchers	15 0 0	" " "
Double Headers...	14 0 0	" " "
One Side and two Ends	15 0 0	" " "
Two Sides and one End	15 0 0	" " "
Splays, Chamferred, Squints	14 0 0	" " "
Second Quality White and Dipped Salt Glazed	2 0 0	" less than best.

BRICKS, &c.—(*continued*).

	s. d.	
Thames and Pit Sand.....	7 3	per yard, delivered.
Thames Ballast.....	6 0	" "
Best Portland Cement	30 0	per ton, "
Best Ground Blue Lias Lime	21 0	" "

NOTE.—The cement or lime is exclusive of the ordinary charge for sacks.

Grey Stone Lime.....12s. 0d. per yard, delivered.
Stourbridge Fireclay in sacks 27s. 6d. per ton at rly. dpt.

STONE.

	s. d.	
BATH STONE—delivered on road waggons, Paddington Depôt	1 6½	per ft. cube.
Do. do. delivered on road waggons, Nine Elms Depôt	1 8¼	" "
PORTLAND STONE (20 ft. average)— Brown Whitbed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf...	2 1	" "
White Basebed, delivered on road waggons, Paddington depôt, Nine Elms depôt, or Pimlico Wharf...	2 2½	" "

	s. d.	
Ancaster in blocks	1 11	per ft. cube, deld. rly. depôt.
Beer "	1 6	" "
Greenshill "	1 10	" "
Darley Dale in blocks...	2 4	" "
Red Corsehill "	2 5	" "
Closeburn Red Freestone	2 0	" "
Red Mansfield "	2 4	" "
YORK STONE—*Robin Hood Quality.*		
Scappled random blocks	2 10	" "
6 in. sawn two sides landings to sizes (under 40 ft. super.)	2 3	per ft. super. "
6 in. rubbed two sides ditto, ditto	2 6	" "
3 in. sawn two sides slabs (random sizes)	0 11½	" "
2 in. to 2½ in. sawn one side slabs (random sizes)	0 7½	" "
1½ in. to 2 in. ditto, ditto	0 6	" "
HARD YORK—		
Scappled random blocks	3 0	per ft. cube, "
6 in. sawn two sides, landings to sizes (under 40 ft. super.)	2 8	per ft. super. "
6 in. rubbed two sides ditto	3 0	" "
3 in. sawn two sides (slabs random sizes)	1 2	" "
2 in. self-faced random flags	0 5	" "

Hopton Wood (Hard Bed) in blocks	2 3	per ft. cube. deld. rly. depôt.
" " " 6 in. sawn both sides landings	2 7	per ft. super. deld. rly. depôt.
" " " 3 in. do.	1 2½	" "

SLATES.

in. in.	£ s. d.	
20 × 10 best blue Bangor	13 2 6	per 1000 of 1200 at r. d.
20 × 12 " "	13 17 6	" "
20 × 10 first quality "	13 0 0	" "
20 × 12 " " "	13 15 0	" "
16 × 8 " " "	7 5 0	" "
20 × 10 best blue Portmadoc	12 12 6	" "
16 × 8 " "	6 12 6	" "
20 × 10 best Eureka unfading green .	15 17 6	" "
20 × 12 " "	18 7 6	" "
18 × 10 " "	13 5 0	" "
16 × 8 " "	10 5 0	" "
20 × 10 permanent green	11 12 6	" "
18 × 10 " "	9 12 6	" "
16 × 8 " "	6 12 6	" "

TILES.

	s. d.	
Best plain red roofing tiles .	42 0	per 1000 at rly. depôt.
Hip and Valley tiles ...	3 7	per doz. " "
Best Brosely tiles.....	50 0	per 1000 " "
Do. Ornamental tiles	52 6	" " "
Hip and Valley tiles ...	4 0	per doz. " "
Best Ruabon red, brown, or brindled do. (Edwards)	57 6	per 1000 " "
Do. Ornamental do	60 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 0	" " "
Best Red or Mottled Stafford shire do. (Peakes).....	51 9	per 1000 " "
Do. Ornamental do.....	54 6	" " "
Hip tiles	4 1	per doz. " "
Valley tiles	3 8	" " "
Best "Rosemary" brand plain tiles.....	48 0	per 1000 " "
Best Ornamental tiles	50 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 8	" " "
Best "Hartshill" brand plain tiles, sand faced.	50 0	per 1000 " "
Do. pressed.....	47 6	" " "
Do. Ornamental do	50 0	" " "
Hip tiles	4 0	per doz. " "
Valley tiles	3 6	" " "

WOOD. At per standard.

	£ s. d.	£ s. d.
Deals: best 3 in. by 11 in. and 4 in. by 9 in. and 11 in	15 10 0	16 10 0
Deals: best 3 by 4.....	14 10 0	15 10 0
Battens: best 2½ in. by 7 in. and 8 in., and 3 in. by 7 in. and 8 in.	11 10 0	12 10 0
Battens: best 2½ by 6 and 3 by 6 ..	0 10 0	less than 7 in. and 8 in.
Deals: seconds	1 0 0	less thn best
Battens: seconds	0 10 0	" " "
2 in. by 4 in. and 2 in. by 6 in....	9 0 0	9 10 0
2 in. by 4½ in. and 2 in. by 5 in....	8 10 0	9 10 0
Foreign Sawn Boards— 1 in. and 1¼ in. by 7 in.	0 10 0	more than battens.
¾ in.	1 0 0	"

WOOD (*continued*).

	At per load of 50 ft. £ s. d.	£ s. d.
Fir timber: best middling Danzig or Memel (average specification)	4 10 0	5 0 0
Seconds	4 5 0	4 10 0
Small timber (8 in. to 10 in.) ...	3 12 6	3 15 0
Small timber (6 in. to 8 in.)	3 0 0	3 10 0
Swedish balks	2 15 0	3 0 0
Pitch-pine timber (30 ft. average)	3 5 0	3 15 0

JOINERS' WOOD.	At per standard. £ s. d.	£ s. d.
White Sea: first yellow deals, 3 in. by 11 in	23 0 0	24 0 0
3 in. by 9 in.	21 0 0	22 10 0
Battens, 2½ in. and 3 in. by 7 in.	17 0 0	18 10 0
Second yellow deals, 3 in. by 11 in.....	18 10 0	20 0 0
" " 3 in. by 9 in.	17 10 0	19 0 0
Battens, 2½ in. and 3 in. by 7 in.	13 10 0	14 10 0
Third yellow deals, 3 in. by 11 in. and 9 in.	15 10 0	16 10 0
Battens, 2½ in. and 3 in. by 7 in.	11 10 0	12 10 0
Petersburg: first yellow deals, 3 in. by 11 in.	21 0 0	22 10 0
Do. 3 in. by 9 in.....	18 0 0	19 10 0
Battens.....	13 10 0	15 0 0
Second yellow deals, 3 in. by 11 in.	16 0 0	17 0 0
Do. 3 in. by 9 in.....	14 10 0	16 0 0
Battens.....	11 0 0	12 10 0
Third yellow deals, 3 in. by 11 in.	13 10 0	14 0 0
Do. 3 in. by 9 in.....	13 0 0	14 0 0
Battens.....	10 0 0	11 0 0
White Sea and Petersburg :— First white deals, 3 in. by 11 in.	14 10 0	15 10 0
" " 3 in. by 9 in.	13 10 0	14 10 0
Battens	11 0 0	12 0 0
Second white deals, 3 in. by 11 in.	13 10 0	14 10 0
" " 3 in. by 9 in.	12 10 0	13 10 0
" " battens	9 10 0	10 10 0
Pitch-pine: deals.....	16 10 0	20 0 0
Under 2 in. thick extra	0 10 0	1 0 0
Yellow Pine—First, regular sizes	40 0 0	upwards.
Oddments	28 0 0	"
Seconds, regular sizes.....	30 0 0	"
Yellow Pine oddments	25 0 0	"
Kauri Pine—Planks, per ft. cube .	0 3 6	0 5 0
Danzig and Stettin Oak Logs— Large, per ft. cube	0 2 6	0 3 6
Small " "	0 2 3	0 2 6
Wainscot Oak Logs, per ft. cube.	0 5 0	0 5 6
Dry Wainscot Oak, per ft. sup. as inch	0 0 8	0 0 9
¾ in. do. do.	0 0 7	—
Dry Mahogany—Honduras, Tabasco, per ft. super. as inch ...	0 0 9	0 1 0
Selected, Figury, per ft. sup. as inch	0 1 6	0 2 6
Dry Walnut, American, per ft. sup. as inch	0 0 10	0 1 0
Teak, per load	17 0 0	21 0 0
American Whitewood Planks, per ft. cube.....	0 4 0	—
Prepared Flooring—	Per square.	
1 in. by 7 in. yellow, planed and shot	0 13 6	0 17 6
1 in. by 7 in. yellow, planed and matched	0 14 0	0 18 0
1¼ in. by 7 in. yellow, planed and matched	0 16 0	1 0 0
1 in. by 7 in. white, planed and shot	0 12 0	0 14 6
1 in. by 7 in. white, planed and matched	0 12 6	0 15 0
1¼ in. by 7 in. white, planed and matched	0 15 0	0 16 6
¾ in. by 7 in. yellow, matched and beaded or V-jointed brds.	0 11 0	0 13 6
1 in. by 7 in. do. do.	0 14 0	0 18 0
¾ in. by 7 in. white do. do.	0 10 0	0 11 6
1 in. by 7 in. do. do. do.	0 11 6	0 13 6

6 in. at 6d. to 9d. per square less than 7 in.

JOISTS, GIRDERS, &c.

	In London, or delivered Railway Vans, per ton. £ s. d.	£ s. d.
Rolled Steel Joists, ordinary sections	6 5 0 ...	7 5 0
Compound Girders, ordinary sections	8 2 6 ...	9 5 0
Angles, Tees and Channels, ordinary sections	7 17 6 ...	8 17 0
Flitch Plates	8 5 0 ...	8 15 0
Cast Iron Columns and Stanchions including ordinary patterns	7 2 6 ...	8 5 0

METALS.

	Per ton, in London. £ s. d.	£ s. d.
IRON—		
Common Bars	7 5 0 ...	7 15 0
Staffordshire Crown Bars, good merchant quality.....	7 15 0 ...	8 5 0
Staffordshire "Marked Bars"	10 0 0 ...	—
Mild Steel Bars.....	8 15 0 ...	9 5 0
Hoop Iron, basis price	9 5 0 ...	9 10 0
" " Galvanized	17 10 0 ...	—
(*And upwards, according to size and gauge.)		
Sheet Iron, Black— Ordinary sizes to 20 g.	9 15 0 ...	—
" " 24 g.	10 15 0 ...	—
" " 26 g.	12 5 0 ...	—
Sheet Iron, Galvanised, flat, ordinary quality— Ordinary sizes—6 ft. by 2 ft. to 3 ft. to 20 g.....	12 15 0 ...	—
Ordinary sizes to 22 g. and 24 g.	13 5 0 ...	—
" " 26 g.	14 5 0 ...	—
Sheet Iron, Galvanised, flat, best quality— Ordinary sizes to 20 g.	16 0 0 ...	—
" " 22 g. and 24 g.	16 10 0 ...	—
" " 26 g.	18 0 0 ...	—
Galvanised Corrugated Sheets— Ordinary sizes 6 ft. to 8 ft. 20 g.	12 10 0 ...	—
" " 22 g. and 24 g.	13 0 0 ...	—
" " 26 g.	13 15 0 ...	—
Best Soft Steel Sheets, 6 ft. by 2 ft. to 3 ft. by 20 g. and thicker	11 15 0 ...	—
Best Soft Steel Sheets, 22 g. & 24 g.	12 15 0 ...	—
" " 26 g.....	14 0 0 ...	—
Cut nails, 3 in. to 6 in.....	9 0 0 ...	9 10 0

(Under 3 in., usual trade extras.)

LEAD, &c.

	Per ton, in London. £ s. d.		£ s. d.
LEAD—Sheet, English, 3lb. and up	14 12 6	...	—
Pipe in coils	15 2 6	...	—
Soil pipe	17 12 6	...	—
Compo pipe	17 12 6	...	—
ZINC—Sheet—			
Vieille Montagne ....ton	27 10 0	...	—
Silesian	27 5 0	...	—
COPPER—			
Strong Sheet....per lb.	0 0 10	...	—
Thin „ .... „	0 0 11	...	—
Copper nails .... „	0 0 10	...	—
BRASS—			
Strong Sheet.... „	0 0 9½	...	—
Thin „ .... „	0 0 10	...	—
TIN—English Ingots .... „	0 1 3½	...	—
SOLDER—Plumbers' .... „	0 0 6½	...	—
Tinmen's.... „	0 0 8	...	—
Blowpipe.... „	0 0 9	...	—

ENGLISH SHEET GLASS IN CRATES.

15 oz. thirds	2¾d. per ft. delivered.
„ fourths	2d. „ „
21 oz. thirds	3¾d. „ „
„ fourths	3d. „ „
26 oz. thirds	4¾d. „ „
„ fourths	3¾d. „ „
32 oz. thirds	5¾d. „ „
„ fourths	5d. „ „
Fluted Sheet, 15 oz.	3¼d. „ „
„ 21 oz.	4¼d. „ „
⅛ Hartley's Rolled Plate	2d. „ „
⅛ „ „ „	2¼d. „ „
⅛ „ „ „	2½d. „ „

OILS, &c.

		£ s. d.
Raw Linseed Oil in pipes	per gallon	0 1 7
„ „ „ in barrels	„	0 1 8
„ „ „ in drums	„	0 1 10
Boiled „ „ in pipes	„	0 1 9
„ „ „ in barrels	„	0 1 10
„ „ „ in drums	„	0 2 0
Turpentine, in barrels	„	0 3 4
„ in drums	„	0 3 6
Genuine Ground English White Lead	per ton	18 15 0
Red Lead, Dry	„	18 10 0
Best Linseed Oil Putty	per cwt.	0 6 6
Stockholm Tar	per barrel	1 12 0

VARNISHES, &c.

	Per gallon. £ s. d.
Fine Pale Oak Varnish	0 8 0
Pale Copal Oak	0 10 6
Superfine Pale Elastic Oak	0 12 6
Fine Extra Hard Church Oak	0 10 0
Superfine Hard-drying Oak, for seats of Churches	0 14 0
Fine Elastic Carriage	0 12 6
Superfine Pale Elastic Carriage	0 16 0
Fine Pale Maple	0 16 0
Finest Pale Durable Copal	0 18 0
Extra Pale French Oil	1 1 0
Eggshell Flatting Varnish	0 18 0
White Copal Enamel	1 4 0
Extra Pale Paper	0 12 0
Best Japan Gold Size	0 10 6
Best Black Japan	0 16 0
Oak and Mahogany Stain	0 9 0
Brunswick Black	0 8 6
Berlin Black	0 16 0
Knotting	0 10 0
French and Brush Polish	0 10 0

TO CORRESPONDENTS.

"A SUBSCRIBER TO THE 'BUILDER'" (As stated below, we can pay no attention to anonymous communications).——J. L.—W. H. O.—A. E. H. (Below our limit).

NOTE.—The responsibility of signed articles, letters, and papers read at meetings rests, of course, with **the** authors.

We cannot undertake to return rejected communications; and the Editor cannot be responsible for drawings, manuscripts, or other documents, sent to or left at this office, unless he has specially asked for them.

Letters or communications (beyond mere news items) which have been duplicated for other journals are NOT DESIRED.

All communications must be authenticated by the name and address of the sender, whether for publication or not. No notice can be taken of anonymous communications.

We are compelled to decline pointing out books and giving addresses.

Any commission to a contributor to write an article, or to execute or lend a drawing for publication, is given subject to the approval of the article or drawing, when received, by the Editor, who retains the right to reject it if unsatisfactory. The receipt by the author of a proof of an article in type does not necessarily imply its acceptance.

All communications regarding literary and artistic matters should be addressed to THE EDITOR; those relating to advertisements and other exclusively business matters should be addressed to THE PUBLISHER, and not to the Editor.

TENDERS

Communications for insertion under this heading should be addressed to "The Editor," and must reach us *not later than* 10 *a.m. on Thursdays.* [N.B.—We cannot publish Tenders unless authenticated either by the architect or the building-owner; and we cannot publish announcements of Tenders accepted unless the amount of the Tender is stated, nor any list in which the lowest Tender is under 100*l.*, unless in some exceptional cases and for special reasons.]

* Denotes *accepted.* † Denotes *provisionally accepted.*

BARKING.—For new valves and grids for sludge pumps, for the London County Council:—

Yates & Thom	£262	J. Cochrane	£230
Ashton, Frost, & Co.	255	Hunter & English, Bow*	222
Clayton, Goodfellow, & Co.	245		

BROADSTAIRS.—For supplying and laying 2,034 super. yds. of limestone tar-paving, for the Broadstairs and St. Peter's Urban District Council. Mr. H. Hurd, C.E., Town Surveyor:—

La Brea Asphalte Co.	£288 3 0	W. Wilson	£220 7 0
J. Smart & Son	262 14 6	Deeley & Co.	220 7 0
Fry Bros.	254 5 0	Constable, Hast, & Co., Kentish Town*	216 2 3
North of England Asphalte Co.	224 11 9	Haigh & Co.	203 8 0
Holman & Co.	220 7 0	J. Wainwright	199 0 0

CABRA (co. Dublin).—For additions and alterations to the auxiliary buildings at Pellets Town, for the South Dublin Guardians. Mr. G. P. Sheridan, architect, Suffolk-street, Dublin. Quantities by Messrs. J. M'D. Bermingham & Son:—

J. Beckett	£13,000 0 0	A. Hall & Co.	11,650 0 0
H. & J. Martin, Ltd.	12,979 0 0	J. Donovan	11,573 15 8
J. P. Good, Ltd.	12,650 0 0	Somers & Sons	11,120 0 0
Connolly & Son	12,380 0 0	M. C. Glynn, 12, North Brunswick-st., Dublin*	10,970 16 4
J. P. Pile	12,200 0 0	J. Reid	10,700 0 0
J. & W. Stewart	11,990 0 0		
Foley & Sons	11,727 15 0		

CHATHAM.—For erecting a new Council school for 900 children at Glencoe-road, for the Chatham Education Committee. Mr. H. H. Dunstall, architect, Bank-chambers, Railway-street, Chatham:—

Elmore & Son	£13,664	G. West	£11,894
Davis & Leanley	13,485	West Bros.	11,762
S. F. Halliday	13,289	R. & G. Brisley	11,677
R. E. Elvy	12,780	H. E. Phillips	11,635
Lorden & Son	12,587	Gann & Co.	11,594
W. M. Patrick	12,326	Ingleton	11,547
Hayward & Parramore	12,200	G. W. Gibson	11,390
G. E. D. Woollard	11,987	E. W. Filley, Chatham*	10,879
Denne & Son	11,970		

[Architect's estimate, £11,250.]

CROSSNESS.—For new air-pumping engine, for the London County Council:—

J. P. Hall & Sons‡	£1,140	Blake, Knowles, & Co.‡	£758
Mirrlees, Watson, & Co.	1,011	Blake, Knowles, & Co.	726
J. P. Hall & Sons	780	G. & J. Weir, Glasgow*	615
W. H. Bailey & Co.	780		

‡ Alternative tender.

DEPTFORD.—For new penstocks, filth hoists, etc., at the Deptford pumping station, for the London County Council:—

R. Moreland & Son	£8,247	Glenfield & Kennedy	£6,511
Yates & Thom	7,416	John Cochrane	6,500
Blakeborough & Sons	6,932	Ashton, Frost, & Co. Blackburn*	5,995
Hunter & English	6,636		

DEPTFORD.—For a 10-ton overhead traveller at the Deptford pumping station, for the London County Council:—

H. J. Coles	£580	T. Smith & Sons, Rodley, nr. Leeds*	£420
Tangyes, Ltd.	560	J. Booth Bros.	380
Isles, Ltd.	521		
H. B. Henderson & Co.	460		

DEVONPORT.—For levelling, paving, etc., streets and lanes. Mr. J. F. Burns, Borough Surveyor, Municipal Offices, 29, Ker-street, Devonport:—

Beatrice-avenue (*Section* 2).

J. F. Donne	£436 5 9	T. Doney	£397 5 0
F. J. Stanbury	418 11 0	E. Duke, Plymouth*	365 11 2
Jefford & Sons	416 11 2		
Pearce Bros.	398 15 0		

Cotehele-avenue (*Section* 2).

Jefford & Sons	£472 2 11	T. Doney	£405 1 11
J. F. Donne	470 12 2	E. Duke, Plymouth*	402 19 0
F. J. Stanbury	433 19 0		
Pearce Bros.	425 0 0		

Lane North of Keyham Barton Estate (*Section* 2).

Pearce Bros.	£712 8 6	E. Duke	£654 6 9
D. J. Damerell	696 0 0	T. Doney	630 19 1
F. J. Stanbury	683 18 6	J. F. Donne, St. Brideaux*	602 8 8
Jefford & Sons	676 11 2		

DINNINGTON COLLIERY.—For building butcher's premises at branch store, for the Cramlington District Co-operative Society Ltd. Mr. J. G. Crone, architect, 21, Grainger-street West, Newcastle-on-Tyne:—

J. Craven	£1,769 8 0	G. Bain	£926 2 0
J. Redford	1,469 14 0	Elliott Bros.	900 0 0
Saint Bros.	1,023 19 0	R. C. Whitfield	899 1 0
J. Curson & Co.	1,009 18 6	R. Nicholson	868 2 0
J. Stobbs	981 1 0	J. Oliver & Sons, Forest Hall*	840 0 0
A. Gray	951 19 0		
R. Harris & Son	933 8 0		

EDMONTON.—For the supply of broken granite, for the Urban District Council. Mr. G. Eedes Eachus, Engineer, Town Hall, Edmonton:—

W. Griffiths & Co., Ltd., 35, Hamilton-house, Bishopsgate-street (Without), E.C.* ... Schedule of prices; twelve months' supply.

EDMONTON.—For the supply of Portland cement, for the Urban District Council. Mr. G. Eedes Eachus, Engineer, Town Hall, Edmonton:—

T. Moy & Co., Ltd., G.E.R. Palace Gates Station, Wood Green, N.* ... Schedule of prices; twelve months' supply.

EDMONTON.—For the supply of stoneware pipes, for the Urban District Council. Mr. G. Eedes Eachus, Engineer, Town Hall, Edmonton:—

J. J. Lees, Hermitage-road, Crumpsall, Manchester (18-in. 1-12th pipes only) ... Schedule; twelve months' supply.

J. H. Turner & Lisney, Palmer's Green, London, N. (18-in. 1-10th, 15-in., 12-in., 9-in., 6-in., and 4-in.) ... Schedule; twelve months' supply.

EDMONTON.—For erecting a chapel at Edmonton Workhouse, Upper Edmonton, N., for the Guardians. Mr. T. E. Knightley, architect, 106, Cannon-street, E.C.:—

M. Calosans	£4,681	B. E. Nightingale	£3,987
J. Stewart	4,389	Allen, Fairhead, & Son	3,980
W. Shurman & Sons, Ltd.	4,383	W. Lawrence & Son	3,974
J. Willmott & Sons	4,354	J. Greenwood, Ltd.	3,963
Oak Building Co., Ltd.	4,250	J. Cassé	3,952
J. Rothwell & Sons	4,230	Rowley Bros.	3,950
Mattock & Parsons	4,182	A. Porter	3,889
A. Faulks	4,100	Foster Bros.	3,840
A. Monk	4,100	S. L. Grist	3,698
Martin, Wells, & Co., Ltd.	4,060	H. Knight & Son	3,649
General Builders, Ltd.	4,038	J. Shelbourne & Co.	3,618
Battley, Son, & Holness	3,994	J. Thomas	3,600
		Sands & Burley, Walthamstow*	3,390

EGREMONT (Cumberland).—For alterations and additions to butcher's shop at central stores, for the Industrial Co-operative Society, Ltd. Messrs. W. G. Scott & Co., architects, Victoria-buildings, Workington:—

Mason and Plasterer: I. Tyson & Sons, Beckermet*	£88 10 6
Joiner: T. & W. Robinson, Egremont*	39 14 6
Plumber and Gas Fitter: J. Waddell, Egremont*	6 1 0
Painter and Glazier: J. Gordon, Maryport*	14 14 0

Complete Tender.

H. Eilbeck	£161 12 6	Chapple & Son	£152 5 0
H. Tinion	154 10 0		

EPSOM.—For the superstructure of the Long Grove Asylum, for the Asylums Committee of the London County Council. Messrs. G. T. Hine & Co., architects, Westminster. Quantities by Messrs. Franklin & Andrews:—

F. & H. F. Higgs	£401,000	Holland & Hannen	£373,711
Mowlem & Co., Ltd.	397,494	Holloway Bros., Ltd.	371,200
H. Lovatt, Ltd.	385,861	J. Carmichael	371,191
Leslie & Co., Ltd.	379,047	C. Wall, Ltd.	368,996
Patman & Fotheringham, Ltd.	375,385	Foster & Dicksee, Rugby‡	359,953
Holliday & Greenwood	374,947		

‡ Recommended for acceptance.

FRASERBURGH (N.B.).—For erecting a free library, corner of King Edward-street and the Hexagon, for the Town Council. Mr W. S. F. Wilson, architect, 6, Broad-street, Fraserburgh. Quantities by architect:—

Mason: G. Corbett, Fraserburgh*	£1,635 0 0
Carpenter: J. Shirran, Fraserburgh*	625 10 0
Slater: A. Thomson, Fraserburgh *	103 15 9
Plumber: E. Ewan, Aberdeen*	145 7 0
Plasterer: W. Macdonall, Fraserburgh*	180 13 1
Painter: J. Stuart Fraserburgh*	107 0 0
Iron Work: G. & W. McLellan, Glasgow*	79 16 8

FRIERN BARNET.—For the erection of public offices in the Friern Barnet-road, N., for the Friern Barnet Urban District Council. Mr. E. J. Reynolds, A.M.Inst.C.E., Surveyor to the Council:—

J. Stewart	£5,489 0	Goodchild & Jeffery	£4,860 0
G. & J. Claridge	5,433 0	Patman & Fotheringham	4,858 0
Miskin & Sons	5,200 0	Foster Bros.	4,649 0
Martin, Wells, & Co.	5,150 0	Dean & Co.	4,579 0
Aldridge & Son	5,000 10	Mattock Bros., Wood Green, N.*	4,533 0
Todd & Newman	5,000 0	W. Dudley	4,425 15
General Builders, Ltd.	4,969 0		
Newby & Co.	4,929 0		

GRANGE-OVER-SANDS.—For road works, Rockland-road, for the Urban District Council. Mr. T. Huddleston, Surveyor, Grange-over-Sands:—

J. Cleator	£467	W. Barrick	£406
J. Thomas & Sons	416	T. & W. Dickin	405
D. Hinchcliffe & Co.	411	Surveyor's Estimate	369

HALIFAX.—For converting four houses at King's Cross into a draper's shop and houses. Messrs. Jackson & Fox, architects, 7, Rawson-street, Halifax:—

Mason: J. Turner & Son, Burnley-road, Halifax*	£67 0
Joiner: F Greenwood & Son, Gibralta, Halifax*	70 0
Plumber: T. W. Bently, Queen's-road, Halifax*	68 5
Slater: C. E. Fossard, Burnley-road, Halifax*	18 10

HAMILTON.—For erecting workmen's dwellings at Lowwaters, for the Hamilton Town Council. Mr. F. Southorn, architect, 144, St. Vincent-st., Glasgow:—

Mason: McKenzie & Donaldson, Motherwell	£3,707
Joiner: J. McGirr & Co., Hamilton	2,355
Slater: W. & D. Waller, Glasgow	333
Plasterer: J. Rowatt, Glassford	676
Plumber: Stalker & Daye, Glasgow	524
Iron Work: P. B. Johnston, Wall, & Co., Coalbridge	167
Painter: J. Carruth, Glasgow	200

HASLEMERE.—For shop and dwelling-houses, Haslemere, for Mr. J. Humphrey. Mr. John H. Howard, architect, The Cottage, Lower-street, Haslemere:—

W. Rollason	£2,400	Haslemere Builders, Ltd.	£1,650
J. W. Ecle	2,386	Chapman & Lowry, Haslemere*	1,640
Mitchell Bros.	1,970		
D. Fry	1,790		

HINDLEY (Lancs.).—For private street works (two contracts), for the Urban District Council. Mr. A. Holden, Surveyor, Council Offices, Hindley:—

S. Cowburn & Sons, Hindley ... £7,644 18 3

LINCOLN.—For restoring the Grey Friars Building, for the Lincoln Corporation. Messrs. W. Watkins & Son, architects, Silver-street, Lincoln:—

C. Baines	£2,012
H. S. & W. Close, Bradford Wharf, Lincoln*	1,844

TENDERS—*Continued on page* 379.

COMPETITIONS, CONTRACTS, AND PUBLIC APPOINTMENTS.

(For some Contracts, &c., still open, but not included in this List, see previous issues.)

COMPETITION.

Nature of Work.	By whom Required.	Premiums.	Designs to be Delivered
*External Treatment of Building for Tropical Climate	Messrs. Sanders & Harding	50*l.*	Dec. 31

CONTRACTS.

Nature of Work or Materials.	By whom Advertised.	Forms of Tenders, etc., supplied by	Tenders to be Delivered
380 Canary Pine Boards	Manchester Tramway Committee ..	J. M. M'Elroy, Tramway Department, 55, Piccadilly, Manchester	Oct. 8
2,000 Tons Haslingden Grit Setts	Manchester Corporation	Chief Clerk, Highways Department, Town Hall, Manchester	do.
Greenhouses, etc., Coronation Park	Radcliffe U.D.C.	Engineer, Council Offices, Radcliffe	do.
400 Tons of Quartzite or Granite	Sevenoaks U.D C.	S. Towlson, Surveyor, Argle-road, Sevenoaks	Oct. 10
Condensers and Pipes	Rochdale Corporation	Lacey, Sellar, & Leigh, Engineers, 2, Queen Anne's-Gate, S.W...	do.
Junior & Infants' Schools, Byron-st., Barkerend-rd.	Bradford Education Committee....	Architect's Department, Education Office, Manor-row, Bradford	do.
Private Street Works, Graig-street.....	Pontypridd U.D.C.	P. R. A. Willoughby, Engr. and Surv., Council Offices, Pontypridd	do.
Street Works, Manchester	Paving, etc., Committee	Paving, etc., Department, Town Hall, Manchester	do.
Theatre, Aberdeen	Robert Arthur Theatres Co.	Brown & Watt, 17, Union-terrace, Aberdeen	do.
Paving, etc., Streets	Camberwell Borough Council.....	W. Oxtoby, Borough Engineer, Town Hall, Camberwell	do.
450 Tons of Granite, etc.	Mexborough U.D.C.....	G. F. Carter, Surveyor to Council, Mexborough, near Rotherham	do.
500 Tons of Hand-Broken Slag	do.	do.	do.
Sewering Hamilton-road (labour only)	Whitefield U.D.C.....	T. Thorp, Knowsley-road, Whitefield	do.
Sewage Works at Radcliffe	Alnwick R.D.C.	H. W. Walton, Clerk, Alnwick	do.
Hall and Schoolroom, Cwmparc, Rhondda Valley ..	.....	A. L. Thomas, Engineer and Architect, Pontypridd	do.
Additions to Tramway Offices, etc., Ley-street, Ilford	Ilford U.D.C.....	H. Shaw, Surveyor, Town Hall, Ilford	do.
Fireclay Retorts, etc.	Rochester, etc., Gaslight Co.	J. M. Veevers, Engineer, Gas Offices, Rochester.....	do.
Underdraining Recreation Ground	Ripley (Derby) U.D.C.	C. W. Thompson, Surveyor to Council.....	do.
Brick Shelter	do.	do.	do.
Painting, etc., Interior of Corn Exchange.....	Luton Town Council	Borough Surveyor, Town Hall, Luton	do.
Two Caretakers' Rooms, Isolation Hospital.....	Falmouth, etc., Port San. Authority	Borough Surveyor, Falmouth	do.
Boiler, Ipswich	Electric Supply and Tramway Com.	F. Ayton, Engineer, Constantine-road, Ipswich	do.
Alterations at Workhouse, West Malling	Guardians	Master at the Workhouse	Oct. 11
Alter., etc., to Drill Hall, St. Mary's-road, S'hampton	1st Hamps. Royal Garr. Volunteers	Lemon & Blizard, Archs., Lansdowne Hse., Castle-la., S'hampton	do.
Street Works, Hamilton-road, Goldthorpe	Bolton-upon-Dearne U.D.C	Surveyor, Council Offices, Bolton-upon-Dearne, Rotherham	do.
Wesleyan Chapel and School, Princeville, Bradford	.....	A. Sharp, Arch., Pearl Assurance-buildings, Market-st., Bradford	do.
Electric Lighting of Ranger's House, Blackheath ..	L.C.C.	M. Fitzmaurice, Engineer, County Hall, Spring Gardens, S.W. ..	do.
Road Works, Sandringham Gardens, etc., N. Shields	Tynemouth Corportion	J. F. Smillie, Borough Surveyor	do.
Building Work, Electric Generating Sta., Summer-la.	Birmingham Elec. Sup. Committee	E. Harper & Bro., Archs, Ruskin-chbrs., Corporation-st., B'ham	do.
Alterations, Danygraig House, Treharris	Conservative Club and Institute ..	W. Dowdeswell, Architect, Treharris	do.
Metals	Southern Mahratta Railway Co. ..	E. Z. Thornton, 46, Queen Anne's-gate, Westminster, S.W.	do.
Road Metal.....	Bedlingtonshire U.D C.	J. E. Johnson, Surveyor, Bedlington	do.
Road Roller, etc.	do.	do.	do.
Road Works, Harlow-street, Bridlington	Executors of the late R. Harrison..	S. Dyer, Architect, 29, Quay-road, Bridlington	do.
Painting Eight Homes at Stval, near Handsworth ..	Committee of Stval Cottage Homes	D. S. Bloomfield, Union Offices, All Saint's, Manchester	do.
Foundations, etc., Smallpox Hospital	Kirkburton Joint Isolation Hospital	J. Berry, Architect, 3, Market-place, Huddersfield	do.
400 Tons of Road Metalling.....	Burry Port U.D.C.	H. B. Jones, Surveyor, Council Offices, Burry Port	do.
Making-up Carshalton Park-road	Carshalton U.D.C.	Council Offices, High-street, Carshalton	do.
Streets and Sewers, near Roath Park, Cardiff.....	Marquess of Bute.....	E. W. M. Corbett, Bute Estate Office, Castle-street, Cardiff	Oct. 12
Factory, Burnett-street, Bradford	Mr. J. Scott	E. L. Gaunt, A.R.I.B.A., 5, Charles-street, Bradford	do.
Out-patients' Department, Bradford Children's Hos.	.....	J. Ledingham, F.R.I.B.A., District Bank-chambers, Bradford ..	do.
Brick & Concrete Covering over Medlock at Ardwick	Manchester Corporation	City Surveyor, Town Hall, Manchester.....	do.
Broken Limestone	Gelligaer, etc., R.D.C.	W. Bevan, Highway Surveyor, Deri, viâ Cardiff	do.
Detached House, etc., West-lane, Baildon	.....	J. Harper Bakes, Arch., Calverley-chambers, Victoria-sq., Leeds	do.
Pumping 40,000 Gallons of Water Daily	Carrick-on-Shannon Waterwks. Com.	P. Flynn, Carrick-on-Shannon	do.
Road Improvement, Llantrisant.....	Llantrisant, etc., R.D.C.....	G. S. Morgan, School-street, Pontyclun	do.
Laying 250 yds. Stoneware Sewer at Penrhiwfer....	do.	do.	do.
Copper Plates for Photo Etching.	Director-General Ordnance Survey	Officer in Charge of Stores, Ordnance Survey Office, Southampton	do.
Corrugated Iron Engine Shed, Mildmay-road..	Chelmsford Corporation	Town Clerk, 16, London-road, Chelmsford	do.
Oil Engine at Waterworks	Athlone U.D.C.....	P. J. Prendergast, A.M.I.C.E., Athlone	do.
Team Labour	Hollingbourn R.D.C.	J. S. Roper, Surveyor, Hollingbourn.....	Oct. 13
400 Tons of Limestone	Nantyglo and Blaina U.D.C.	W. J. Davies, Surveyor, Blaina	do.
Electric Light, Telephones, etc., Diphtheria Pavilion	Brighton Corporation	H. Talbot, Town Clerk, Town Hall, Brighton.....	do.
5 Dwlg.-houses, New-st., Allargate Bldg. Est., D'ham	.....	G. Ord, Architect, 16, The Avenue, Durham	do.
Sewage Tank, etc., Hatton, near Tutbury	Repton R.D.C.	J. T. H. Richardson, Engineer, Hatton, near Tutbury	do.
Public Conveniences, Phœnix Recreation Ground ..	Glasgow Corporation	Office of Public Works, 64, Cochrane-street, Glasgow	do.
Engine Room Stores	Aston Manor Town Council	R. Foster, Electricity Works, Chester-street, Aston Manor	Oct. 14
Electrical and General Stores	do.	do.	do.
Ironmongery	Sheffield Education Committee	Education Offices, Sheffield.....	do.
*New Coastguard Buildings, Osmington, nr. Weymouth	Admiralty	Directors of Works Department, 21, Northumberland-ave., W.C.	to.
Gas Engines and Pumps (Sewage Works, Contract 3)	Methley U.D.C.....	G. B. Hartley, Engineer, 10, East-parade, Leeds	Oct. 15
A 4-in. Water Main (600 yds.).....	Dunbar Town Council	Town Clerk, Dunbar.....	do.
Road over the Links, Whitley Bay	Whitley, etc., U.D.C.	J. P. Spencer, Architect and Surveyor, 30, Howard-st., N. Shields	do.
Goods and Materials	Plymouth Corporation.....	J. Paton, Borough Engineer, Municipal Offices, Plymouth	do.
Cleansing River Owenbuoy, etc.....	Trus. of Ballinhassig Drainage Dist.	P. Hayes, 59, South Mall, Cork	do.
Road Metal	Faversham Corporation	A. Tassell, 20, West-street, Faversham	do.
Heating and Ventilating Dennistoun Library	Glasgow Corporation	J. R. Rhind, Architect, 67, Hope-street, Glasgow	Oct. 17
Heating and Ventilating Bridgeton Library.....	do.	do.	do.
New Wing, Neasham Hall, near Darlington.....	Sir T. Wrightson, Bart.	G. G. Hoskins, F.R.I.B.A., Court-chambers, Darlington	do.
Painting Works at Police Stations.....	.....	G. D. Oliver, County Architect, Carlisle	do.
Stores	G.W. Railway Co.	Office of Stores Superintendent, Swindon.....	do.
Cooking Apparatus, etc,, Stepping Hill Infirmary ..	Stockport Guardians	W. H. Ward, Architect, Paradise-street, Birmingham	do.
Retorts and Firebricks	Rotherham Gas Committee	F. A. Winstanley, Engineer and Manager	do.
Painting, etc., Deanhouse Workhouse Premises	Huddersfield Guardians	E. A. Rigby, Union Offices, Ramsden-street, Huddersfield	do.
Cookery Centre, Francis-avenue School.....	Portsmouth Education Committee	A. H. Bone, Architect, Cambridge Junction, Portsmouth	do.
Reconstruction of Roof of Cork Library Buildings..	.....	R. Walker and Son, 17, South Mall, Cork	do.
Temporary Hospital at Workhouse.....	Wigan Guardians	J. E. Alcock, Union Workhouse, Frog-lane, Wigan	do.
*Sewer Works in Gutters Hedge-lane	Hendon U.D.C.....	Engineer to the Council, Council's Offices, Hendon, N.W.	do.
Enlargement of Council School, Dudley-road	Birmingham Education Committee	A. Rowse, 3, Newhall-street, Birmingham	Oct. 18
*Making-up Roads	Tottenham U.D.C.	Council's Engineer, 712, High-road, Tottenham	do.
Arc Lamps, etc. (Contract 15).....	Barrow-in-Furness Corporation....	H. R. Burnett, Electricity Works, Barrow-in-Furness	do.
Making-up Roads, etc., New Barnet	East Barnet Valley U.D.C.	H. York, Surveyor, Station-road, New Barnet	do.
Private Improvement Works..	Bootle Corporation	Borough Engineer's Office	do.
426 Tons of Iron Wire Fencing	South Indian Railway Co.	H. W. Notman, 55, Gracechurch-street, London, E.C.	do.
Alterations, etc., Londonderry Post Office	Office of Public Works.	Office of Works, Dublin	do.
Electric Lighting of Council House	Wandsworth Borough Council	P. W. P. Adams, 28, Victoria-street, Westminster	do.
Sinking a Shaft, 350 yds., at Thornley Colliery	Weardale Steel, etc., Co.	Thornley Colliery, Thornley, R.S.O.	Oct. 19
Alterations, etc., National Schools, Pontnewydd....	.....	W. H. Dashwood Caple, Architect, Church-st.-chambers, Cardiff	do.
*Erection of Buildings at Lower Cross-road	Borough of Hampstead	Borough Engineer, Town Hall, Hampstead, N.W.....	do.
*Roadmkg. Wks., Huddridge-st., Hurlingham-rd., etc.	Borough of Fulham	Borough Surveyor, Town Hall, Fulham, S.W.	do.
Heating Thurlstone Church..	Building Committee.....	J. M. Greaves, Townend House, Thurlstone, Penistone.....	Oct. 20

CONTRACTS.—*Continued.*

Nature of Work or Materials.	By whom Advertised.	Forms of Tender, etc., supplied by	Tenders to be delivered
1,200 yds. of Pipe Sewers, Ravenstone-with-Snibstone	Ashby-de-la-Zouch R.D.C.	S. Turner, Surveyor, Avenue-road, Ashby-de-la-Zouch	Oct. 21
1,100 Tons of Broken Granite	Bishop's Stortford U.D C.	T. Swatheridge, Clerk, North-street, Bishop's Stortford	do.
100 Tons of Granite Chippings	do.	do.	do.
Electric Lighting	Tottenham U.D.C.	E. Crowne, 712, High-road, Tottenham	do.
*New Coastguard Buildings at Cockburnspath	Admiralty	Supt. Engineer, H.M. Naval Estab., Rosyth, Inverkeithing, N.B.	do.
Cast-Iron Pipes for Water Supply to Gransha Buildgs.	Derry District Lunatic Asylum	A. Robinson, C.E., Richmond-street, Londonderry	do.
*New Sorting Office at Streatham	H.M. Office of Works	H.M. Office of Works, Storey's Gate, S.W.	do.
Steam Rolling Roads	Wrotham U.D.C.	A. J. H. Powell, Surveyor, Borough Green, Sevenoaks	Oct. 22
Steam Rolling	Truro R.D.C.	J. Retallack, Surveyor, Ventongimps, Callestick, R.S.O.	do.
Stores	Belfast Harbour Commissioners	G. F. L. Giles, Harbour Engineer, Belfast	do.
Clearing out Sand from Borehole	Witham U.D.C.	W. Bindon Blood, Clerk, Witham	do.
120 ft. of Internal Lining Pipe	do.	do.	do.
Alterations, etc., to Old Council Offices	Ince U.D.C.	A. T. Swain, Surveyor, Ince, near Wigan	do.
*New Public Library	Gravesend Town Council	E. J. Bennett, Architect, 10, Gray's Inn-square, W.C.	Oct. 24
Road Material	Romford R.D.C.	G. Lapwood, Highway Surveyor, Victoria Chambers, Romford	do.
Subway, Latchinere-road and Cabul-road, Battersea	Directors West London Exten. Ry.	Office of Engineer, Paddington Station (G.W.R.)	do.
Steam Roller Houses, Shedding, etc.	Kent County Council	County Surveyor, West Borough-chambers, Maidstone	do.
Dust Destructor, etc.	Middleton Corporation	F. Entwistle, Town Clerk, Middleton	Oct. 25
Street Works, St. Anne's-on-Sea, Lancs.	U.D.C.	Surveyor, South Drive, St. Anne's	Oct. 26
*Post Office at Deepcut Camp, Farnborough	H.M. Office of Works	H.M. Office of Works, Storey's Gate, S.W.	Oct. 27
*Branch Post Office at North Camp, Aldershot	do.	do.	do.
School at Penyrenglyn	Rhondda U.D.C.	J. Rees, Architect, Hillside Cottage, Pentre	Oct. 28
Small Mortuary, Beaver-road	Ashford U.D.C.	W. Terrill, Surveyor, North-street, Ashford, Kent	do.
*Supply, Erect., and Completion of Laundry Machinery	Hornsey T.C.	Borough Engineer, 99, Southwood-lane, Highgate, N.	Oct. 29
*Alteration of Buildings at Hospital, Muswell Hill	do.	do.	do.
Engine House and Boiler House at Pumping Station	Sunderland, etc., Water Co.	Maritime-buildings, Thomas-street, Sunderland	Nov. 1
Electric Light, Wks., Lunatic Asy., Garlands, Carlisle	Committee of Visitors	C. W. A. Hodgson, Clk., Cumberld., Lun. Asy., Garlands, Carlisle	do.
Drainage Works, Battle Hill	Battle U.D.C.	C. Sheppard, Clerk to Council, Battle, Sussex	Nov. 2
Vertically Cast-Iron Pipes for Water Mains	Watford U.D.C.	Engineer's Office, Watford	do.
Valves, Ironwork, etc., Stanley Moor Reservoir	Buxton U.D.C.	G. H. Hill & Sons, Engineers, Albert-chbrs., Albert-sq., Manchester	Nov. 5
Lowering 350 yds. of Outfall Pipes	Ystradyfodwg, etc, Main Sew. Bd.	H. P. Nicholas, Clerk to Board, Pontypridd	No date.
Clearing Site, Her Majesty's Theatre, Carlisle	.....	G. Hodgson, Victoria Hall Buildings, Low^ther-street, Carlisle	do.
Fifteen Through Houses, Bradford-road, Batley	.....	J. H. Brearley, Architect, Branch-road, Batley	do.
Shop, Showrooms, etc, Jameson-street, Hull	Messrs. W. Harland & Co.	Freeman, Son, & Gaskell, Archs., Albert-chbrs., 11, Carr-lane, Hull	do.
Draining 4 acres of Sewage Farm	Stowmarket U.D.C.	G. W. Lingwood, Station-road, Stowmarket	do.
New Street, Sewers, etc., Brynhafod, Oswestry	.....	Shayler & Ridge, Surveyors, Oswestry	do.
*New Electric Generating Station	Birmingham Electric Supply Com.	Ewen Harper and Bro., Corporation-street, Birmingham	do.

PUBLIC APPOINTMENTS.

Nature of Appointment.	By whom Advertised.	Salary.	Applications to be in
*Clerk of Works	Southgate U.D.C.	3*l.* 10s. per week	Oct. 15
*2nd Class Engrs., & Tech. Officers, Engr's. Dept. G.P.O.	Civil Service Commission	Not stated	Oct. 20

Those marked with an asterisk (*) are advertised in this Number. *Competitions*, iv. *Contracts*, iv. vi. viii. x. *Public Appointments*, xvii.

TENDERS.—*Continued from page 377.*

LLANGOLLEN.—For restoration, alteration, and improvements to the Market Hall and Assembly Rooms, for the Urban District Council. Mr. R. Davies, architect, Bangor:—

E. Evans & Sons	£3,490	W. H. Thomas, Oswestry*	£2,594
Jones & Evans	3,300		
D. Davies & Sons	3,105		

LONDON.—For renewing the electric light installation on the Woolwich ferry boats *Duncan* and *Gordon*, for the London County Council:—

Belliss & Morcom, Ltd.	£1,306	0
	1,282	0
Electric Construction Co., Ltd.	1,265	0
	1,221	0
	1,131	10
	1,085	10
	969	0
	921	0
General Electric Co., Ltd.	1,068	0
Johnson & Phillips	890	0
Siemens Bros. & Co.*	812	0
Newton's, Ltd.	815	12
	807	12
Scott & Mountain, Ltd.	718	0

LONDON.—For improving the ventilation of the committee rooms, etc., at the County Hall, for the London County Council:—

Braby & Co.	£260	0	J. Crundy £210 0
J. Keith & Blackman Co., Ltd.	250	0	Hayward Bros. & Co. 178 17
Ewart & Son, Ltd.	230	0	Comyn, Ching, & Co.* 175 0

LONDON EDUCATION COMMITTEE TENDERS.

PARTITIONS, ETC.

Chelsea, Kilburn-lane.

W. Hammond	£398	0	General Builders, Ltd. £179 0
W. R. & A. Hide	262	10	F. T. Chinchen & Co., Harrow-rd., Kensal-green* 174 0
W. Densham & Sons	250	0	
E. Triggs	230	0	
G. H. Sealy	210	0	

E. Islington, "Forster"

General Builders, Ltd.	£225		Stevens Bros., 1a, Yonge-park, Seven Sisters-road, N. £153
Marchant & Hirst	189		
J. Willmott & Sons	170		
G. S. S. Williams & Son	158		

Whitechapel, Buck's-row (Carrying out Sanitary Works During the Recess).

Ashby Bros.	£346	0	A. E. Symes £197 0
Parrott & Isom	299	0	Barrett & Power 190 0
Lathey Bros.	277	0	F. Bull, 31, Old Hill-street, Clapton* 177 0
Ashby & Horner	254	0	
J. Peattie	228	0	
Stevens Bros.	202	18	

South-West Bethnal Green, Daniel-street.

Barrett & Power	£241	12 6	J. Grover & Son, Wilton Works, New North-road* £144 10 0
H. Bouneau	180	0 0	
Vigor & Co.	179	0 0	

North-East Bethnal Green, Globe-terrace.

G. Barker	£194	0	E. Spencer & Co. £142 0
F. Bull	188	0	A. J. Sheffield 140 0
Barrett & Power	175	9	Staines & Son, 61, Great Eastern-street* 125 0
H. Bouneau	150	0	
Vigor & Co.	145	0	

N. Islington, Upper Hornsey-road (special).

J. Willmott & Sons	£110		G. S. S. Williams & Son, Richmond-street, Thornhill-square £46
Marchant & Hirst	79		
Stevens Bros.	61		

[Lowest accepted in each case.]

Wandsworth, Ensham-street School (Adapting and Fitting-up a Temporary Iron Building for the Purposes of a Cookery and Laundry Centre).

E. Triggs	£180	J. Garrett & Son	£150
W. Hammond	157	R. E. Williams & Sons	143
R. A. Jewell	154	E. B. Tucker, 82, Lavender-hill, S.W.*	143
R. S. Ronald	150		

East St. Pancras, "Brecknock" School (Redividing Rooms C, D, and E in the Boys' Department into Four Rooms by Moving certain Partitions, and Providing a New Partition, etc.).

McCormick & Sons	£598	Stevens Bros.	£412
Marchant & Hirst	577	Thompson & Beveridge, 151, Harrow-road, W.*	391
M. Pearson	545		
F. T. Chinchen & Co.	519		
London School Furniture Co.	495		

Poplar, Glengall-road School (Dividing Classroom).

Barrett & Power	£465	0	A. E. Symes, Carpenter's - road, Stratford* £420 0
H. Bouneau	460	0	
Vigor & Co.	422	10	

Hammersmith, Westville-road (Adapting Premises for a Housewifery Centre).

C. Gurling	£551	12	General Builders, Ltd. £397 0
W. Hornett	537	0	F. T. Chinchen & Co. 394 0
M. Pearson	480	0	W. R. & A. Hide 389 0
J. R. Sims	437	0	R. S. Ronald, St. Ann's-hill, Wandsworth* 375 0
F. G. Minter	432	0	
G. H. Sealy	419	10	
S. Polden	409	0	

FOR ERECTING PLAYSHEDS AT VARIOUS SCHOOLS.

—	"Millbank."			Rolls-road.			Canterbury-road.			Ponton-road.			—		
	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.	£	s.	d.
J. Garrett & Son, 17, Balham-hill	53	0	0	62	0	0	87	0	0	81	0	0	283	0	0
E. B. Tucker, 82, Lavender-hill	57	0	0	65	0	0	89	0	0	87	0	0	298	0	0
Rice & Son, 15, Stockwell-road	55	0	0	66	0	0	92	0	0	85	0	0	298	0	0
H. Line, 81, Peckham-rye	54	0	0	52	0	0	107	0	0	86	0	0	299	0	0
L. Whitehead & Co., Ltd., Portland-place, Clapham-road	59	10	0	69	10	0	106	0	0	94	0	0	329	0	0
E. Triggs, 92, The Chase, Clapham	59	12	0	71	14	0	103	0	0	100	0	0	334	6	0
Lathey Bros., New-road, Battersea	73	0	0	71	0	0	105	0	0	101	0	0	350	0	0
W. V. Goad, 241, Camberwell-road	66	10	0	81	0	0	104	10	0	105	10	0	357	10	0
J. Marsland & Sons, 1, York-street, Walworth	94	0	0	75	0	0	110	0	0	110	0	0	389	0	0

—	Globe-street.			Northwold-road.			—		
	£	s.	d.	£	s.	d.	£	s.	d.
F. Bull, 31, Old Hill-street, Clapton	52	0	0	44	0	0	96	0	0
J. Grover & Son, Wilton Works, New North-road	61	0	0	48	0	0	109	0	0
McCormick & Sons, Northampton-street	66	0	0	52	0	0	118	0	0
G. Barker, Philpot-street, Commercial-road	65	0	0	55	0	0	120	0	0
C. Dearing & Son, Halliford-street, Islington	69	0	0	57	0	0	126	0	0
Turnbull & Son, Northumberland-alley	75	0	0	63	0	0	138	0	0
Vigor & Co., King-street, Poplar	74	0	0	74	0	0	148	0	0
A. J. Sheffield, 218, East India-road	78	0	0	72	0	0	150	0	0
Barrett & Power, St. Thomas' Works, Hackney	85	0	0	68	0	0	153	0	0
J. Willmott & Sons, Hitchin, Herts	95	0	0	125	0	0	220	0	0

LONDON.—For the docking and repair of the s.s. *Barrow*, for the London County Council:—

Thames Ironworks Shipbuilding & Engineering Co., Ltd.	£1,771 11 0
W. C. Reader & Co.	1,634 2 5
Mills & Knight	1,493 18 6
London Graving Dock Co., Ltd.	1,463 0 0
Brown's Dry Dock & Engineering Co., Ltd.	1,399 0 0
Fletcher, Son, & Fearnall, Ltd., Millwall*	1,399 0 0

MANSFIELD.—For erecting mixed and infants' schools, Newgate-lane, for 700 children, for the Education Committee. Messrs. Vallance & Westwick, architects, Mansfield:—

T. Cuthbert, Hyson Green, Nottingham* .. £7,550

MOSS SIDE (Lancs.).—For erecting public baths, Middleton-street, for the Moss Side Urban District Council. Mr. H. B. Longley, Engineer and Surveyor, Council Offices, Moss Side. Quantities by Mr. J. B. Langley, Manchester:—

G. Macfarlane & Son, Manchester* £10,725

[The lowest of ten tenders received.]

NORTHAMPTON.—For new school and cookery centre, Kingsthorpe-grove, and formation of road, for the Education Committee. Messrs. Law and Harris, architects and surveyors, Northampton. Quantities by the architects:—

E. Archer	£16,174	H. Green	£15,612
E. D. Sharman & Son	16,150	E. Green	15,382
W. Beardsmore	16,081	G. J. Fisher	15,330
R. Cosford	15,859	W. Higgins	15,262
W. Heap	15,773	A. P. Hawtin, Colwyn-road*	15,259
G. W. Souster	15,724	A. A. Clarke	15,225
G. F. Sharman	15,670	A. J. Chown‡	14,815

‡ Withdrawn.

PONTARDAWE (Wales).—For constructing a stone bridge, approaches, etc., over the Nantmilw, for the Rural District Council:—

P. Rogers, Glais Clydach £174 10

PORTISHEAD (Bristol).—For road works at Portishead, for the Urban District Council. Mr. Frederick H. Smith, surveyor, Fairmount, Portishead. Quantities by surveyor:—

Woodhill-road.

M. Lovell	£2,490 16 7	Lloyd & Son	£1,787 0 7
J. Marshall	2,194 0 0	T. Free & Co.	1,776 5 1
W. A. Green	2,112 10 1	J. & T. Binns, Knowle, Bristol, & Croydon*	1,638 15 2
W. & J. Bennett	2,018 0 0	J. Coles & Son	1,567 2 11
R. W. Hunter & Co.	1,989 17 2		

Beach-road.

M. Lovell	£1,594 18 11	T. Free & Co.	£1,269 11 4
J. Marshall	1,477 0 0	Lloyd & Son	1 225 5 6
W. A. Green	1,468 10 0	J. Coles & Son	1,149 2 7
R. W. Hunter & Co.	1,466 3 2	J. & T. Binns, Knowle, Bristol, & Croydon*	1,142 15 3
W. & J. Bennett	1,430 0 0		

STEVENAGE.—For tar-paving and resetting kerb and channel of Albert-street and part of High-street, for the Urban District Council. Mr. John Gillespie, Council's Surveyor, Stevenage:—

S. Deeley & Co.	£371 12 6	Wallace & Inns	£188 15 10
P. Smith	352 9 2	J. Smart	172 8 2
La Brea Asphalte Co., Ltd.	330 10 0	Vickers & Field, 25, Victoria-st., S.W.*	151 14 2
Asphaltes United	290 5 0		
Public Works Co.	230 5 0		

SWANLEY (Kent).—For erecting iron fencing at the White Oak School, for the Metropolitan Asylums Board. Mr. W. T. Hatch, Engineer-in-chief:—

F. Fox	£380 15 0	G. B. Smith & Co.	£165 15 0
W. Lucy & Co., Ltd.	259 10 0	S. W. Gibson	163 7 6
Lockerbie & Wilkinson, Ltd.	207 2 0	E. J. Raybould & Co., Ltd.	151 0 0
Hefford & Shuttlewood, Ltd.	197 10 0	Bayliss, Jones, & Bayliss, Ltd.	149 15 0
W. Hayward & Sons, Ltd.	195 0 0	M. McVey	147 15 9
Measures Bros., Ltd.	193 10 0	J. Priest & Son, Ltd.	145 0 0
Salway Bros.	182 14 6	Hill & Smith, Brierley Hill Ironworks, Staffs.*	136 0 0

TOOTING.—For constructing an overground convenience at Cemetery, Blackshaw-road, Tooting, S.W., for the Lambeth Borough Council. Mr. H. Edwards, Borough Engineer, 346, Kennington-road, S.E.:—

T. Lapthorne & Co.	£346 0	C. Horton	£299 0
W. J. Coleman & Co.	346 0	J. N. Leonard	298 15
London & County Builders, Ltd.	339 11	C. Cruse & Co.	277 0
		J. Shelbourne & Co., 70, Fenchurch-st., E.C.*	276 0

TROWBRIDGE.—For additions and alterations to schools, for the Managers of the Newtown British Schools. Messrs. T. B. Silcock & S. S. Reay, architects, 47, Milsom-street, Bath:—

H. A. Forse & Sons	£2,235	A. J. Colborne	£1,738
Downing & Rudman	2,007	Erwood & Morris	1,694
A. E. Denby & Co.	1,819	W. Webb	1,595
A. Wills & Co.	1,798	J. Long & Sons, Bath*	1,593

WARLEY.—For constructing detritus and screening chambers, storage tanks and pump well, and erecting pumping station, office, and stores, for the Oldbury Urban District Council. Mr. J. T. Eayrs, engineer, 39, Corporation-street, Birmingham:—

J. Wortley, Oldbury* £1,431 7 11

WARRINGTON.—For widening Warrington Bridge, for the Corporation. Mr J. J. Webster, engineer, 39, Victoria-street, Westminster, S.W.:—

H. Fairclough, Warrington* £3,263

WIMBLEDON.—For making-up roads, for the Urban District Council. Mr. C. H. Cooper, Engineer and Surveyor, Council Offices, Wimbledon:—

Avebury-road.

E. Iles, jun., Wimbledon* £865

Strathearn-road.

E. Iles, jun., Wimbledon* 480

Worple-avenue.

T. Adams, Wood Green, N.* 424

B. NOWELL & Co.,

Stone Merchants & Contractors.

Chief Office.—*Warwick Road, KENSINGTON.*

Norway, Guernsey, and Leicestershire Granite, Kerb, Pitching, and Yorkshire Stone.

ESTIMATES GIVEN FOR EVERY DESCRIPTION OF ROAD MAKING.

J. J. ETRIDGE, Jr.

SLATE MERCHANT,

SLATER and TILER.

Penrhyn-Bangor,

Oakeley - Portmadoc,

And every other description of Slates, except American, Ready for immediate delivery to any Railway Station.

RED SANDFACED NIBBED ROOFING TILES ALWAYS IN STOCK.

Applications for Prices, &c., to

BETHNAL GREEN SLATE WORKS,

BETHNAL GREEN, LONDON, E.

THE BATH STONE FIRMS, Ltd.

BATH.

FOR ALL THE PROVED KINDS OF

BATH STONE.

FLUATE, for Hardening, Waterproofing, and Preserving Building Materials.

HAM HILL STONE.

DOULTING STONE.

The Ham Hill and Doulting Stone Co.

(incorporating the Ham Hill Stone Co. and C. Trask and Son, The Doulting Stone Co.)

Chief Office:—Norton, Stoke-under-Ham. Somerset.

London Agent:—Mr. E. A. Williams, 16, Craven-street, Strand.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H Glenn), Office, 42, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. Asphalte Contractors to the Forth Bridge Co.

SPRAGUE & CO., Ltd.,

PHOTOLITHOGRAPHERS,

4 & 5, East Harding-street,

Fetter-lane, E.C.

QUANTITIES, &c., LITHOGRAPHED accurately and with despatch. [Telephone No. 414 Westminster.

METCHIM & SON {8, PRINCES STREET, S.W. and 32, CLEMENT'S LANE, E.C.

"QUANTITY SURVEYORS' DIARY & TABLES," For 1904, price 6d., post 7d. In leather 1/-, post 1/1.

JOINERY

Of every description and in any kind of Wood.

CHAS. E. ORFEUR, LTD.,

ESTIMATES ON APPLICATION.

COLNE BANK WORKS, COLCHESTER.

Telephone: 0195. Telegrams: "Orfeur, Colchester."

ASPHALTE

For Horizontal & Vertical Damp Courses.

For Flat Roofs, Basements, & other Floors.

Special attention is given to the above by

THE

French Asphalte Co.

Contractors to

H.M. Office of Works, The School Board for London, &c.

For estimates, quotations, and all information apply at the Offices of the Company,

5, LAURENCE POUNTNEY HILL, CANNON STREET, E.C.

TWELVE GOLD AND SILVER MEDALS AWARDED.

IRON CISTERNS.

F. BRABY & CO., LTD.

VERY PROMPT SUPPLY.

LARGE STOCK READY.

Particulars on application. **CYLINDERS FOR HOT-WATER CIRCULATION.**

LONDON: 352 to 364, EUSTON-ROAD, N.W., and 218 and 220, HIGH-STREET, BOROUGH, S.E.

LIVERPOOL: 6 and 8, HATTON GARDEN.

GLASGOW: 47 and 49, ST. ENOCH-SQUARE.

BRISTOL: ASHTON GATE WORKS, CORONATION-RD.

TELEPHONE, No. 134, North.

TREGGON
& CO., Ltd.

ZINC ROOFERS

COPPER ROOFERS

IRON ROOFERS

Enquiries Invited from Town and Country.

TREGGON
& CO., Ltd.

Zinc, Iron, Felt, and Cistern Merchants and Manufacturers, and Contractors for

COPPER, IRON, and ZINC ROOFING,

FIXED COMPLETE.

(THE OLDEST FIRM IN THE TRADE.)

YORK WORKS,
BREWERY ROAD, LONDON, N.

Telegrams: "TREGGON, LONDON."

Our Depots are connected by siding with G.W.R., L. & N.W.R., M.R., and other Railway Lines for the dispatch of urgent and mixed stone orders to Country Customers.

DEPOTS.—ADDISON WHARF: 191, WARWICK ROAD, KENSINGTON. IMPERIAL WHARF: 195, WARWICK ROAD, KENSINGTON. AND INSIDE G.W.R. & L. & N.W.R. DEPOTS: WARWICK ROAD, KENSINGTON.

Telegraphic Address: "JURASSIC, LONDON." Offices: 191, WARWICK ROAD, KENSINGTON, LONDON, W.

GRICE & CO., STONE AND GRANITE MERCHANTS.

MERCHANTS IN EVERY DESCRIPTION OF BUILDING AND MONUMENTAL STONE.

MR. ERNEST GRICE begs to inform the Architectural Profession and Building Trades generally that the Partnership carried on between Mr. Gething and himself since March, 1889, under the style of GETHING and GRICE, has been DISSOLVED as and from the 2nd day of January, 1904. Mr. Grice having purchased all Mr. Gething's share and interest in the late business and the assets thereof, he will continue same without interruption under the style of GRICE & CO., at the premises occupied by the late firm. To prevent confusion and delay customers and clients of the late firm are requested to address all correspondence in full to GRICE & CO., ADDISON WHARF, 191, WARWICK ROAD, KENSINGTON.

"STONWOD" is an absolutely fireproof, acidproof, aseptic, dustproof, verminproof floor covering, which, whilst equal in appearance to and laid at approximately the same cost as linoleum, will outwear concrete, wood blocks, or any other form of floor surface. It is cheap, silent, durable, warm, and exceptionally sanitary, and has been extensively laid for H.M. WAR DEPARTMENT with uniformly satisfactory results.

? "STONWOD" ?

Specially recommended for employment in Hospitals, Churches, Schools, Factories, Warehouses, Shops, Flats, Banks, Hotel and Theatre Corridors, Offices and Bars, Public Libraries, Municipal Buildings, Railway Waiting Rooms, Platforms and Refreshment Rooms, Police Stations, Workmen's Dwellings, Motor Garages, Billiard Saloons, Public Baths and Wash-houses, etc., etc.

SEND FOR SAMPLES AND DESCRIPTIVE PAMPHLET TO—

THE STONWOD FIREPROOF FLOORING CO., LTD.,
109, VICTORIA STREET,
WESTMINSTER, LONDON, S.W.

Telegrams: "STONWOD, LONDON."
Telephone: 5286 Westminster.
(Works: ASHFORD, MIDDLESEX.)

WILLESDEN PAPER.

2-Ply for Underlining Slates, Tiles, Iron Buildings with or without Boards. | 1-Ply for Laying on Joists under Floor Board to Deaden Sound, &c.

WATER-PROOF. ROT-PROOF. INSECT PROOF.

Lists and views of large contracts where Willesden Paper has been used, and Catalogues and Samples, Post Free.

WILLESDEN PAPER AND CANVAS WORKS, WILLESDEN JUNC., LONDON, N.W.

The LONDON ASPHALTE Co., Ltd.,

FINSBURY PAVEMENT HOUSE, FINSBURY PAVEMENT, E.C.

Asphalte for Carriage and Foot Ways, Compressed or Mastic, Damp Courses, Vertical and Horizontal, Flooring, Roofing, &c.

SPECIALITIES: Manufacturers of Asphalte Paving Flags.

10 in. by 10 in. by 2½ in. for Carriage Ways.
10 in. by 10 in. by 1½ in. for Footways, Basements, Warehouse Floors, Roofings, &c.
10 in. by 10 in. by 1 in. for Hospital Flooring.
Compressed by powerful Hydraulic Machinery, ready for laying.

Thicknesses vary according to requirements.

PAMPHLET AND PRICES ON APPLICATION.

Works—Leven Wharf, Leven Road, South Bromley, E.

Dennett Fireproof Floors, &c.

CONSTRUCTIVE IRONWORK OF ALL DESCRIPTIONS.
DESIGNS AND ESTIMATES SUPPLIED TO ARCHITECTS.

FIREPROOF ENCASEMENT OF IRONWORK.
CONCRETE STAIRS, PAVING, &c.

Apply to DENNETT & INGLE {*No. 24, QUEEN ANNE'S GATE,* late of No. 5 WHITEHALL, *LONDON S.W.*

PHŒNIX ASSURANCE CO., LTD.

PHŒNIX FIRE OFFICE,

10, LOMBARD STREET,
AND
57, CHARING CROSS, LONDON.

LOWEST CURRENT RATES.
LIBERAL AND PROMPT SETTLEMENTS.
ASSURED FREE OF LIABILITY.
ELECTRIC LIGHTING RULES SUPPLIED.

NORWICH UNION FIRE OFFICE.
Founded 1797.
Head Office, Norwich—Surrey-street.
50, Fleet-st., E.C.; 71-72, King William-st., E.C.; 195, Piccadilly, W.; 81, Edgware-rd., W.; 1, Victoria st., S.W.; St. James's Branch, 26, Charles-st.
Claims Paid ..... £18,065,000.
Applications for Agencies invited.

GUARDIAN ASSURANCE COMPANY LIMITED.
Head Office, 11, Lombard-street, London, E.C
Law Courts Branch, 21, Fleet-street, E.C.
Established 1821. Subscribed Capital, 2,000,000l.
Chairman—Hon. EVELYN HUBBARD.
Deputy Chairman—EDWARD NORMAN, Esq.
Vice Chairman—REGINALD E. JOHNSTON, Esq.
FIRE POLICIES which expired at Michaelmas should be RENEWED at the offices of the Company or with the Agents on or before the 14th day of OCTOBER.
Manager of the Fire Department—A. J. RELTON.

PUBLISHER'S NOTICES.

Nat. Tel., 6112, Gerrard. Telegrams, "The Builder, London."

THE INDEX (with TITLE-PAGE) for VOLUME LXXXVI. (January to June, 1904) was given as a supplement with the issue for July 9.

CLOTH CASES for Binding the Numbers are now ready, price 2s. 6d. each; also

READING CASES (Cloth), with Strings, price 9d. each.

THE EIGHTY-SIXTH VOLUME of "The Builder" (bound), price Twelve Shillings and Sixpence, is now ready.

SUBSCRIBERS' VOLUMES, on being sent to the Office, will be bound at a cost of 3s. 6d. each.

CHARGES FOR ADVERTISEMENTS.

COMPETITIONS, CONTRACTS, ALL NOTICES ISSUED BY CORPORATE BODIES, COUNTY AND OTHER COUNCILS, PROSPECTUSES OF PUBLIC COMPANIES, SALES BY TENDER, LEGAL ANNOUNCEMENTS, &c., &c.

Six lines, or under ..... 6s. 0d.
Each additional line ..... 1s. 0d.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS, TRADE AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

Terms for series of Trade advertisements, and for front page, and other special positions, on application to the Publisher.

SITUATIONS WANTED (Single-handed—Labour only).

FOUR lines (about thirty words) or under ..... 2s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

PREPAYMENT IS ABSOLUTELY NECESSARY.

*** Stamps *must not* be sent, but all sums should be remitted by Postal Orders, payable to J. MORGAN, and addressed to the Publisher of "THE BUILDER," Catherine Street, W.C.

Advertisements for the current week's issue are received up to THREE o'clock p.m. on THURSDAY, but "Classification" is impossible in the case of any which may reach the Office after HALF-PAST ONE p.m. on that day. Those intended for the Outside Wrapper should be in by TWELVE noon on WEDNESDAY.

ALTERATIONS IN STANDING ADVERTISEMENTS or ORDERS TO DISCONTINUE same must reach the Office before TEN o'clock on WEDNESDAY MORNING.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, &c., left at the Office in reply to advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

PERSONS advertising in "THE BUILDER" may have *Replies addressed to the Office*, Catherine Street, Covent Garden, W.C., *free of charge*. Letters will be forwarded if addressed envelopes are sent, together with sufficient stamps to cover the postage. Unused stamps are returned to advertisers the week after publication.

AN EDITION Printed on THIN PAPER, for FOREIGN and COLONIAL CIRCULATION, is issued every week.

READING CASES { NINEPENCE EACH. By post (carefully packed) 1s.

PRACTICAL HANDBOOKS FOR ARCHITECTS & BUILDERS.

ARCHITECTURAL HYGIENE; or, SANITARY SCIENCE AS APPLIED TO BUILDINGS. By B. F. FLETCHER and H. P. FLETCHER. 5s. net.

CARPENTRY AND JOINERY. By B. F. FLETCHER and H. P. FLETCHER. 5s. net.

SANITARY FITTINGS AND PLUMBING. By G. L. SUTCLIFFE, A.R.I.B.A., M.S.I. 5s. net.

ROADS: THEIR CONSTRUCTION AND MAINTENANCE. By ALLAN GREENWELL, A.M.I.C.E., and J. V. ELSDEN, F.G.S. 5s. net.

LAND SURVEYING AND LEVELLING. By A. T. WALMISLEY, M.I.C.E. 6s. net.

FIELD WORK AND INSTRUMENTS. By A. T. WALMISLEY. 5s. net.

STRUCTURAL IRON AND STEEL. By W. N. TWELVETREES, M.I.M.E. 6s. net.

SPECIFICATIONS FOR BUILDING WORKS, AND HOW TO WRITE THEM. By F. R. FARROW, F.R.I.B.A. 3s. 6d. net.

STRESSES AND STRAINS. Their Calculation and that of their Resistances by Formulæ and Graphic Method. By F. R. FARROW, F.R.I.B.A. 5s. net.

QUANTITIES AND QUANTITY TAKING. By W. E. DAVIS. 3s. 6d. net.

GAS AND GAS FITTINGS. A Handbook relating to Coal, Water, and Power Gas, and Acetylene. By H. F. HILLS, F.C.S. 5s. net.

WHITTAKER & CO.,
2, WHITE HART ST., LONDON, E.C.

BILLS OF QUANTITIES, &c.

LITHOGRAPHED CORRECTLY BY RETURN OF POST.
LIBERAL DISCOUNT OFF USUAL PRICES.
PLANS BEST STYLE.

ALLDAY, LIMITED,
Shakespeare Press, Birmingham.

TWO GOOD BOOKS

BUILDERS' QUANTITIES. By H. C. GRUBB, Lecturer on Quantities to the Beckenham Technical Institute, First Honourman City and Guilds of London Institute. With 73 Diagrams. Crown 8vo, 4s. 6d.

"The author treats the subject in a simple and yet adequate manner. The illustrations are clearly drawn and well reproduced."—*Technics.*

"The author may certainly be congratulated on the plan and execution of a book that will prove a boon to all who desire a better acquaintance with the principles and practice of quantity surveying."—*Building World.*

"The book can be recommended to all who wish to commence studying this subject as a lucid, concise, and comprehensive account, and Mr. Grubb is to be congratulated on his success."—*Manual Training Teacher.*

"Compact and well arranged."—*Surveyor.*

CARPENTRY AND JOINERY. By F. C. WEBBER. With 176 Illustrations. Third Edition. Crown 8vo, 3s. 6d.

The drawings are intended to serve not only as illustrations but also as examples for reproduction by the student.

"An admirable elementary text-book on the subject."—*Builder.*

METHUEN & CO., 36, Essex St., London, W.C.

TEXT BOOKS for ARCHITECTS' ASSISTANTS.

CUSACK'S MENSURATION. 2/6 net., post free 2/9.

CUSACK'S PLANE GEOMETRY, CUSACK'S SOLID GEOMETRY, CUSACK'S PERSPECTIVES, } Each, 3/6 net., post free, 3/10.

CUSACK'S ELEMENTARY NOTIONS IN ARCHITECTURE. Illustrated. 1s. net., post free 1/2.

Published:—6, White Street, London, E.C.

THE ABBEYS OF GREAT BRITAIN.

In each case—VIEW, specially drawn for this series; GROUND PLAN, to a large scale, shaded to indicate the date and style of the several parts; DESCRIPTIVE ARTICLE, &c.

1894.		1895.	
1. Westminster	(out of print).	8. Fountains...	(out of print).
2. Rievaulx	JULY.	9. Tynemouth	FEB.
3. Glastonbury	AUG.	10. Malmesbury	MARCH.
4. Croyland	SEPT.	11. Netley	APRIL.
5. Whitby	OCT.	12. Bolton	MAY.
6. Bath	NOV.	13. Lindisfarne	JUNE.
7. Tewkesbury	DEC.	14. Furness	JULY.
		15. Romsey ...	(out of print).
1896.		**1897.**	
16. Kirkstall ...	(out of print).	20. Great Malvern ...	JAN.
17. Abbeydore...	APRIL.	21. Sherborne...	APRIL.
18. Selby	JULY.	22. Bayham	JULY.
19. Byland...	OCT.	23. Pershore ...	(out of print).
1898.		**1899.**	
24. Melrose ...	(out of print).	28. Llanthony	(out of print).
25. Waltham ...	(out of print).	29. Hexham ...	(out of print).
26. Tintern	JULY.	30. Valle Crucis	(out of print).
27. Lanercost	OCT.	31. Cartmel	OCT.
1900.		**1901.**	
32. Dorchester	JAN.	36. Milton Abbas (out of print). (The last of the Series.)	
33. Boxgrove	APRIL.		
34. Dunstable...	JULY.		
35. Buildwas	OCT.		

Post-free FOURPENCE-HALFPENNY each.

London: The Publisher of "The Builder," Catherine-street, W.C.

THE "BUILDER" CATHEDRAL SERIES.

ENGLAND AND WALES.

In each case—EXTERIOR VIEW, specially drawn for this series; GROUND PLAN, to a large scale, shaded to indicate the date and style of the several parts; DESCRIPTIVE ARTICLE, with sketches of details, &c.

*1 Canterbury	9 Norwich	17 Llandaff	24 Truro
*2 Lichfield	10 Rochester	18 Oxford	25 St. David's
*3 St. Albans	*11 Lincoln	*19 Southwell	*26 York
*4 Peterboro'	*12 Gloucester	20 Worcester	*27 Ripon
*5 Wells	*13 St. Paul's	21 Bangor and 22 St. Asaph	*28 Chester
*6 Exeter	*14 Hereford		29 Manchester
*7 Salisbury	*15 Chichester		30 Carlisle
8 Bristol	*16 Ely	*23 Winchester	*31 Durham

* Post free FOURPENCE-HALFPENNY each, except 1, 2, 3, 4, 5, 6, 7, 11, 12, 13, 14, 15, 16, 19, 23, 26, 27, 28, and 31, the numbers of "THE BUILDER" containing these being OUT OF PRINT; but reprints of the VIEW, PLAN, AND DESCRIPTION OF LICHFIELD, WELLS, EXETER, SALISBURY, GLOUCESTER, CHICHESTER, WINCHESTER, YORK, RIPON, CHESTER, and DURHAM can be had, price 1s. each. Postage and packing of reprints extra; single sets, 2d., or the eleven sets together 6d.

☞ The whole Series (excepting Nos. 1, 3, 4, 11, 13, 14, 16, and 19, which are now quite out of print, but including reprints as above), 14s. 8d. post free, 15s. 7½d.

SCOTLAND.

1 Glasgow	4 Kirkwall	6 Dunblane	8 St. Andrews
2 Edinburgh	5 Iona	7 Dunkeld (out of print)	9 Brechin
3 Aberdeen			10 Elgin

Price 4½d. each.

IRELAND.

1 St Patrick	2 Christchurch (out of print)	3 Kilkenny

Price 4½d. each.

Publisher of "The Builder," Catherine-street, London, W.C.

"THE BUILDER."—Editions, bound in half-yearly volumes, from 1873 to 1898, for SALE at best offer.
Apply GLENN, 42, Poultry, E.C.

THE WORSHIPFUL COMPANY of CARPENTERS.
LECTURES ON SANITARY BUILDING CONSTRUCTION.
In connexion with an Examination to be held at Carpenters' Hall, November 24 and 26.

DATE, 1904.	LECTURER.	SUBJECT & SYNOPSIS.
Thursday, October 13	PROFESSOR R. ELSEY SMITH, A.R.I.B.A. (Professor of Architecture at King's College).	Sites—Foundations—How to Treat Them When Wet—Damp and Exposed Walls.
October 20	H. D. SEARLES-WOOD, ESQ., F.R.I.B.A.	Construction of Water-Closets—Dry Closets—Water Supply—Plumbers' Work—Drainage—Pipelaying—Ventilating and Testing Drains.
October 27	PROFESSOR F. M. SIMPSON, F.R.I.B.A. (Professor of Architecture at University College).	Building Materials and Modes of Using Them—The Decay and Preservation of Timber.
November 3	PROFESSOR HENRY ROBINSON, M.INST.C.E.	Ventilation—Impure Air and its Causes—Natural and Artificial Ventilation—Warming.
November 10	JAMES BARTLETT, ESQ., M.S.A. (Lecturer at King's College).	Principles of Calculating Areas—Setting out Work—Checking Levels—Acts of Parliament—By-Laws.

These Lectures are primarily intended for Candidates for the present or future Examinations, and are illustrated by take-to-pieces models, large diagrams, photographs, and specimens of materials.
Lectures commence at 7.30 p.m.
Entry forms for the Examination, tickets for the Lectures, and all particulars can be had from J. H. FREEMAN, Esq.
Carpenters' Hall, London Wall.

SURVEYORS' INSTITUTION EXAMINATIONS.
COMPLETE COURSES OF PREPARATION for these Examinations are given, either in Class, by Correspondence, or in Office, by Mr. RICHARD PARRY, F.S.I., A.M.I.C.E., Surveyor and Barrister-at-Law.
The Six and Eighteen Months' Courses are Now Commencing.
During the last nine years, out of FIFTY-EIGHT Prize Winners, FORTY-ONE were prepared by Mr. PARRY, while at each of the Examinations of the last two years the whole of the prizes awarded have been obtained by Mr. PARRY'S pupils, namely:—The Institution Prize, the Special Prize, the Beadel Prize, the Driver Prize, the Penfold Gold Medal, the Penfold Silver Medal, and the Crawter Prize.
For particulars of the Courses of Work, or for any advice with respect to these Examinations, apply to Mr. RICHARD PARRY 82, Victoria-street, Westminster.
Telephone No. 680, Westminster.

ALL TECHNICAL EXAMINATIONS.—Preparation by Correspondence or Personally. Twenty-six first places in open competitions.—G. A. T. MIDDLETON, 19, Craven-street, Strand W.C.

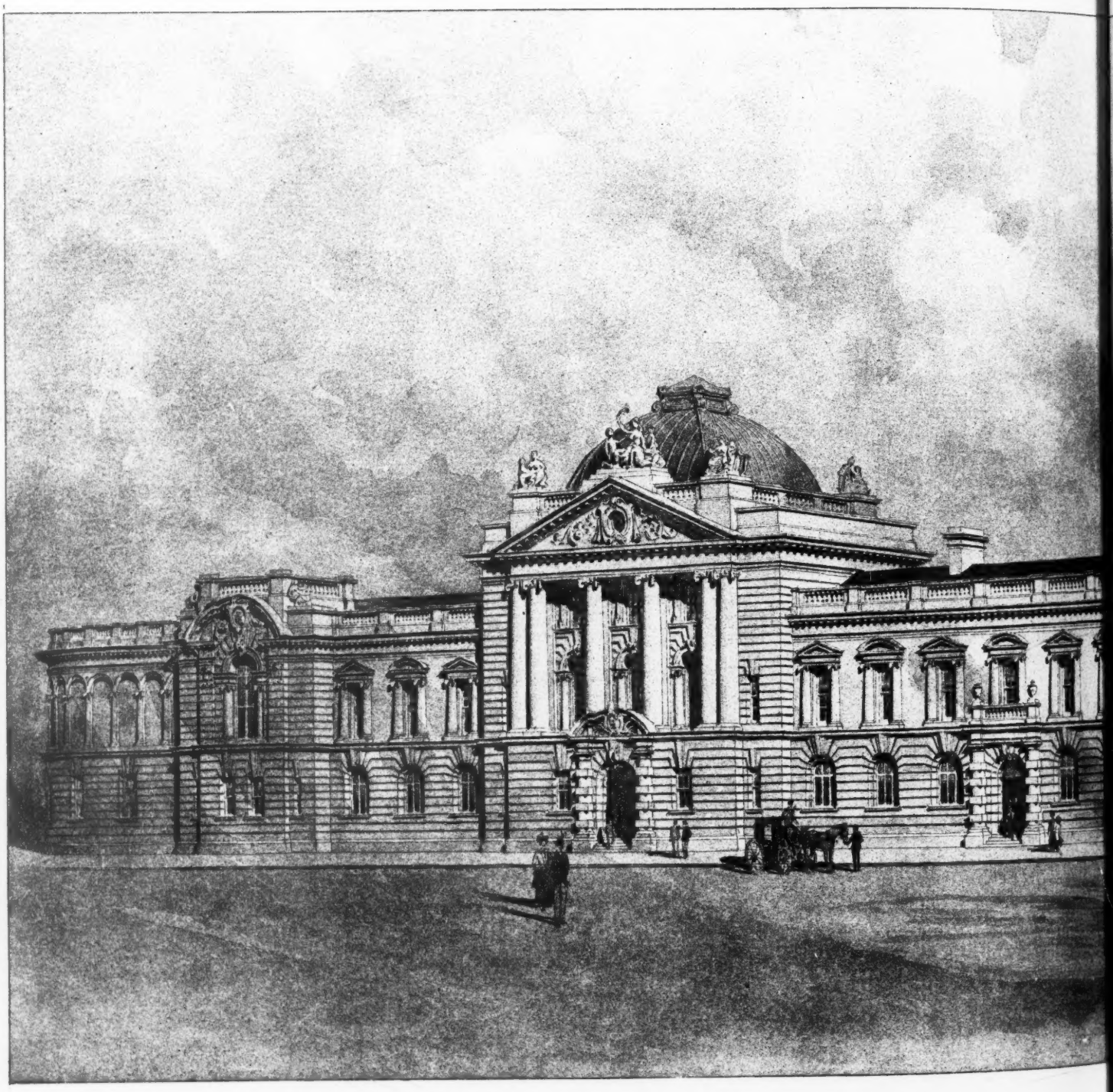
SANITARY INSPECTORS', SURVEYORS', and SANITARY ENGINEERS' EXAMINATIONS held by the SANITARY INSTITUTE, MUNICIPAL AND COUNTY ENGINEERS' ASSOCIATION, the INSTITUTE OF SANITARY ENGINEERS, the SANITARY INSPECTORS' EXAMINATION BOARD, and other Bodies.
A CIVIL ENGINEER and SURVEYOR (A.M.I.C.E. certificated Public Sanitary Inspector and Surveyor) PREPARES CANDIDATES by correspondence for the above. All or any single subject may be taken.
Instruction by Correspondence in **Builder's Quantities**, 1st and 2nd Course, **Building Construction, Builder's Pricings, Estimates, etc., Levelling and Surveying, and Specifications**, for Architects' and Surveyors' Assistants, Builders, Clerks of Works, Foremen, and others.
One to twelve months' course of Office Instruction by arrangement. Work in all courses now commencing. For complete Syllabus (52 pages) of all subjects, terms, etc., apply C. S. I., 28, Victoria-street, Westminster, S.W.

SANITARY INSTITUTE EXAMS.—Preparation for the Inspectors' Examination by a Correspondence Course, needing no text-books or Acts, by C. H. CLARKE, Assoc.San.Inst.; Fellow Inst. San. Engineers; Honours Medallist in Hygiene, etc.; Author of Clarke's "Aids":—Notes on Sanitary Law, 1s. 6d.; Examination Questions on San. Law, 6d.; Calculation of Cubic Space, 1s.; Trade Nuisances, 6d.; Practical Drain Inspection, 6d.—Prospectus and "Aids" from 120, Thoroldroad, Ilford, E.

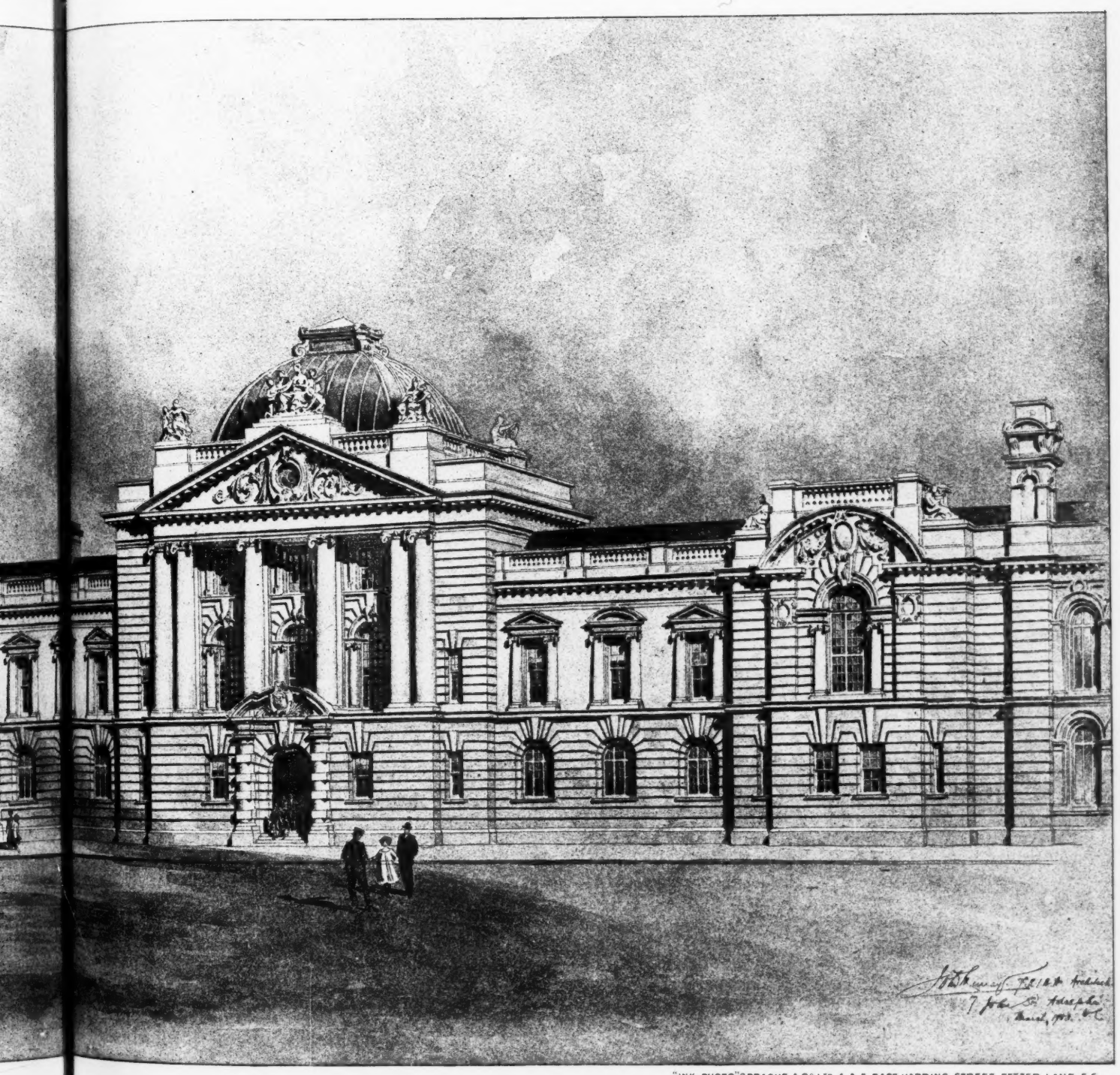
R.I.B.A. EXAMINATIONS.
PREPARATION, personally or by correspondence, in 6, 9, or 12 months' courses. ARCHITECTURAL LENDING LIBRARY, including model drawings, casts, etc.—For syllabus apply to Mr. A. G. BOND, B.A. Oxon., A.R.I.B.A., 115, Gower-street, W.C. (late Howgate & Bond).

MUNICIPAL and COUNTY ENGINEERS' EXAMINATION.—Mr. RICHARD PARRY, A.M.I.C.E., F.S.I., etc., 82, Victoria-street, Westminster, prepares pupils by correspondence for this examination. The course of work may be taken to extend over six or twelve months according to previous knowledge.

MUNICIPAL and COUNTY ENGINEERS' EXAMINATION.—CORRESPONDENCE CLASSES (six months' course) commencing in October for this examination by a Surveyor with seventeen years' municipal experience, eight lecturing and coaching, A.M.I.C.E. and Graduate of Municipal and County Engineers' Association (both by examination). Careful individual attention. Exceptionally moderate terms. Easy payments.—Address Box 344, Office of "The Builder."



COMPETITION DESIGN FOR EXTENSION TO HU TOWN HALL.



"INK-PHOTO," SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

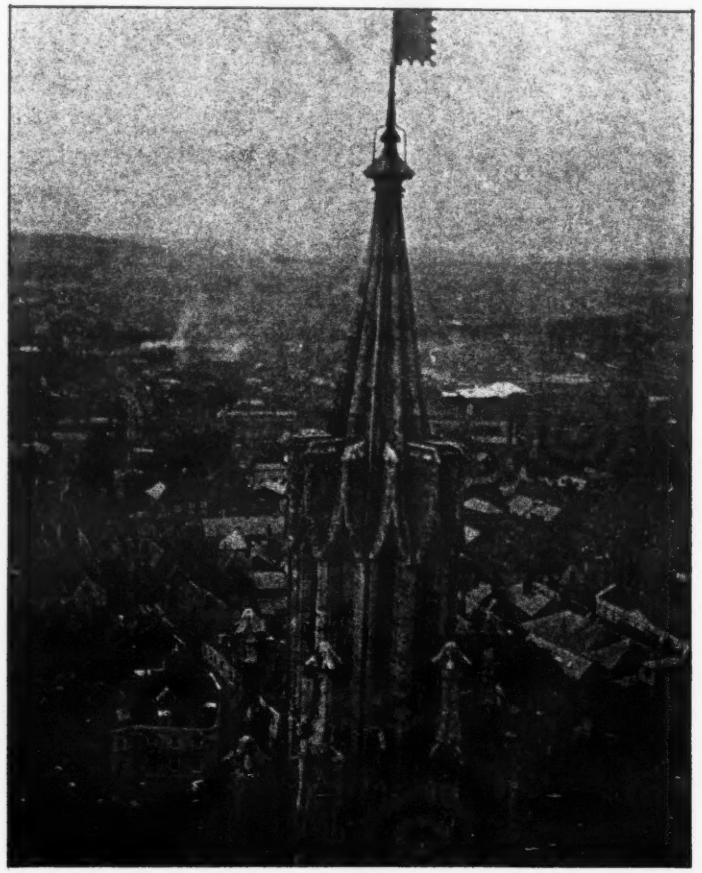
ON TO HU TOWN HALL.—By Mr. John Murray, F.R.I.B.A.

NEW OFFICES FOR THE BRISTOL GAS COMPANY.—M

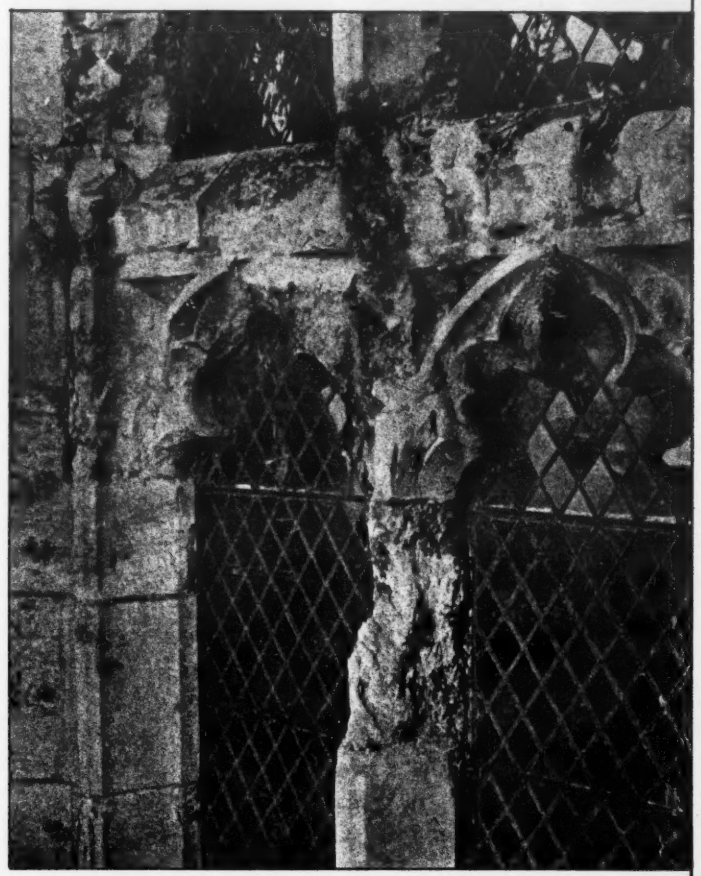
"INK-PHOTO," SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

STOL GAS COMPANY.—MR. W. V. GOUGH, ARCHITECT.

1.



2.



3.

PHOTOGRAPHS FROM

CANTERBURY CATHEDRAL TOWER,

SHOWING THE

STATE OF DECAY OF VARIOUS PORTIONS.

References.

1.—Lantern, S.W. Cracked mullion above the transom.

2.—S.W. Turret, showing the iron-topped gablets and

3.—Lantern, South. (The transoms originally battlemented.)

4.—Decayed ornament of the angle, S.E. (Morton's rebus).

5.—S.E. Angle: the dotted ink lines show the proper size of the buttress.

4.

References.

1.—Lantern, S.W. Cracked mullion above the transom.

2.—S.W. Turret, showing the iron-topped gablets and

3.—Lantern, South. (The transoms originally battlemented.)

4.—Decayed ornament of the angle, S.E. (Morton's rebus).

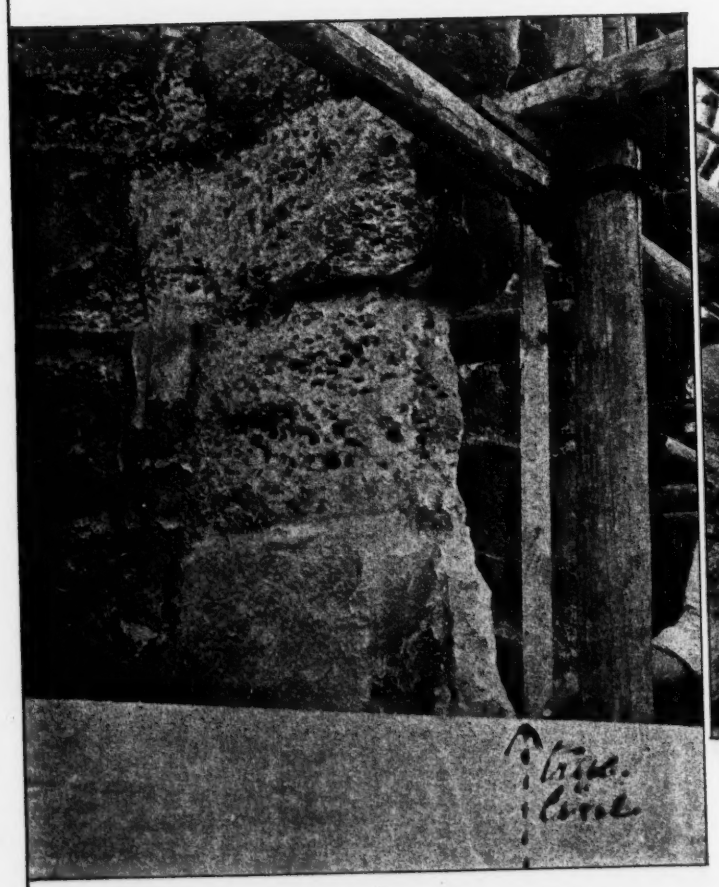
5.—S.E. Angle: the dotted ink lines show the proper size of the buttress.

6.—Abraded buttress, S.E. angle. The lath on the right shows the true line.

7.—N.W. Angle, looking up. (This is in the best condition of all.)

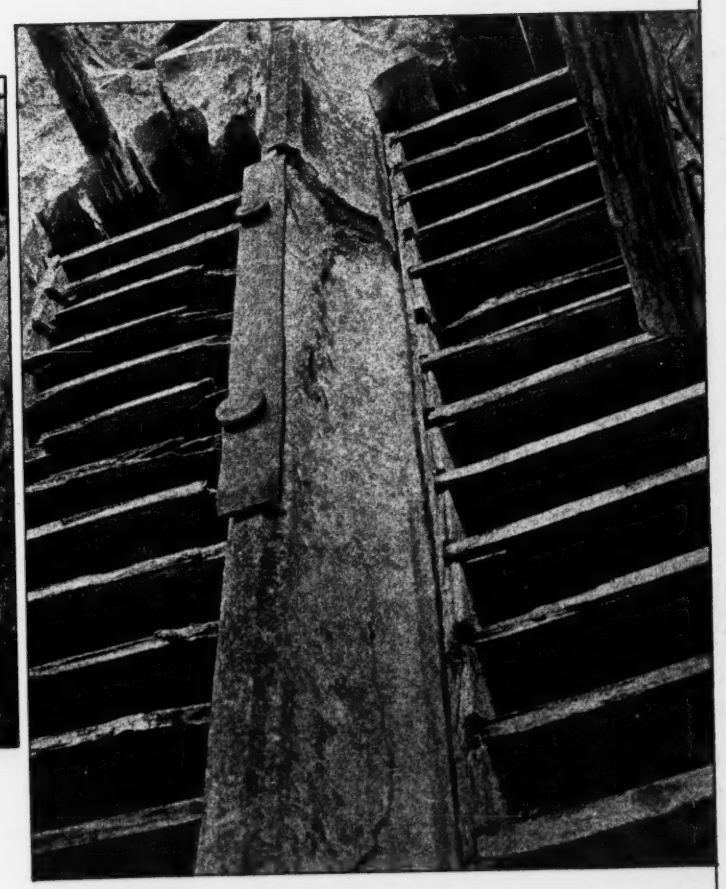
8.—The Belfry, S.W. Cracked mullion repaired by iron strap (the whole has moved out two inches).

5.



6.

7.



8.

"INK-PHOTO" SPRAGUE & Co LTD 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

1.

2.

3.

4.

"INK-PHOTO" SPRAGUE & Co. Ltd. 4 & 5, EAST HARDING STREET, FETTER LANE, E.C.

DESIGN FOR STAINED GLASS.—By Mr. Horace Wooller.